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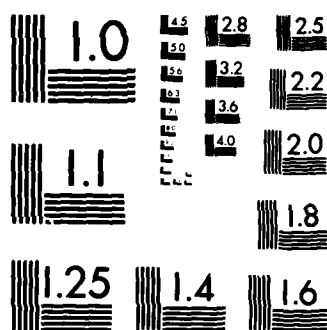
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PIPELINE ANALYSIS MODEL (PAM)

JANUARY 1983

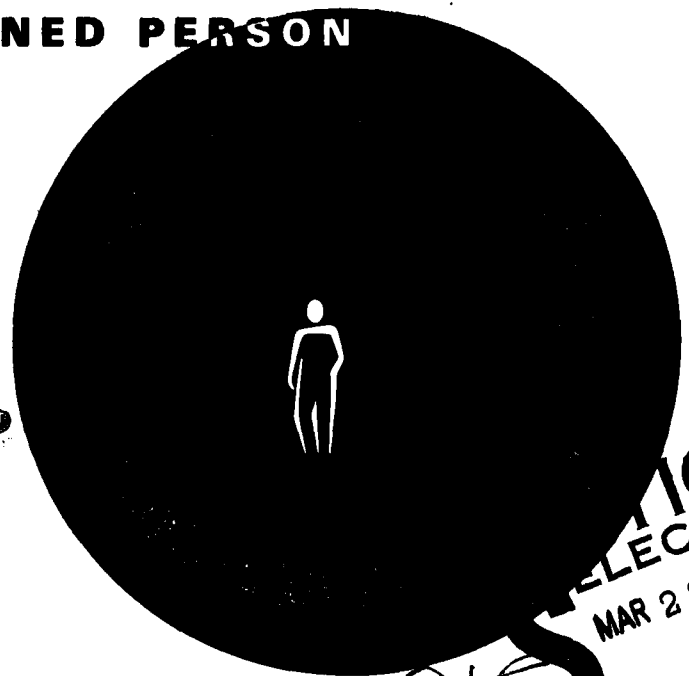
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TRAINING ANALYSIS AND EVALUATION GROUP
ORLANDO FLORIDA 32813

Technical Report 139

PIPELINE ANALYSIS MODEL (PAM)

Gary W. Hodak
Mary L. Sankey

Training Analysis and Evaluation Group

January 1983

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flow of students at various points in the Navy training pipelines. This report presents the Pipeline Analysis Model and provides a guide to the operations of the model.

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The support of the TAEG personnel has been invaluable in this effort. We are especially indebted to Mr. Charles Guitard for his encouragement and guidance in program development and for helping create specific pipeline exhibits.

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SECTION I

INTRODUCTION

The Navy's personnel recruiting and training organizations must acquire and provide the fleet with trained personnel who are capable of effectively operating and maintaining the many complex systems in existence today. To accomplish this requirement, the Chief of Naval Education and Training (CNET) employs a variety of training technologies. Technologies in widespread use include instructional systems development (ISD) for design and development of Navy instructional materials and self-paced, individualized, and computer based/managed instruction. In spite of the increased emphasis on individualized instruction in the Navy, the time spent in the training pipelines and the costs associated with the training have continued to increase. In recent years, a significant portion of the increase in time and cost has been closely associated with the backlog of students that are in the various training pipelines but not under instruction (i.e., awaiting instruction (AI) or awaiting transfer (AT)).

Reducing the backlog of students, and thus effecting a reduction in training costs, is a complex and difficult task. Up to date information on student input and output, attrition and setback rates, schoolhouse capacities, and course information is required to effectively manage the pipelines. The number of training pipelines and their interactions contribute significantly to the complexity of pipeline management. Training device requirements and availabilities further complicate the problem. In addition, completion of self-paced courses is dependent on individual student ability and motivation; consequently, time estimates for completion of the courses are difficult to predict accurately.

The development of a Pipeline Analysis Model (PAM) that accurately reflects the current system is extremely complicated. However, the problem is ideally suited to solution using computer simulations. This approach enables planners and programmers to create models of the real system, manipulate characteristics of the model, and make inferences about the actions of the real system.

BACKGROUND

In fiscal years 1980 and 1981 the numbers of students in CNET schools awaiting instruction (AI) and awaiting transfer (AT) exceeded estimates by a significant amount. This had a twofold effect on the Navy. First, it raised training costs and, second, it reduced the number of personnel available for operational billets in the fleet and the time spent in the operational billet. A CNET Student Pipeline Management Task Force was established¹ to study the pipeline management problems and to recommend solutions. The task force was to determine the cause(s) of the AI and AT backlogs and to develop/select mathematical or simulation models of the specialized training pipelines. These models were to be used for feasibility studies during the programming process, for forecasting and tracking during the training execution process, and for identifying management actions/policies which would maximize output and minimize backlogs.

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The Training Analysis and Evaluation Group (TAEG) was tasked² to provide support to the CNET Task Force. The tasking required TAEG to study existing mathematical and network simulation models for application to the Navy student pipeline management problem.

PURPOSE

This report describes the Pipeline Analysis Model and provides a guide for CNET personnel to operate the model.

ORGANIZATION OF THIS REPORT

In addition to this introduction, the report is divided into two other sections and eight appendices. Section II presents an overview of the Pipeline Analysis Model and briefly describes the major system options. Section III is a detailed guide for the operation of the system. Examples of the various outputs available from the PAM are contained in the appendices.

SECTION II

DESCRIPTION OF THE PIPELINE ANALYSIS MODEL

The CNET has, as a primary mission, the responsibility for providing shorebased education and training for the Navy. The Chief of Naval Technical Training (CNTECHTRA) is a shore activity, under the command of CNET, whose mission is to coordinate and direct Navy recruit and technical training. The Pipeline Analysis Model presented in this report primarily models the training activities under the direct control of CNTECHTRA. Figure 1 provides an overview of the Navy's major training pipelines. As can be seen from the figure, the students are first recruited from the general populace by the Naval Recruiting Command. They are then sent to one of the three recruit training centers (RTCs) for basic training. (All female recruit training is done in Orlando, Florida.) Upon graduation from recruit training, students generally proceed to follow-on training. Those individuals selected for electronics-related technical training will proceed to a Basic Electricity and Electronics (BE/E) School and then on to a follow-on "A" school. All individuals opting for aviation training will proceed to Naval Air Technical Training Center (NATTC) Memphis for a four week aviations fundamental (AFUN) course prior to convening BE/E School at Memphis. Those individuals not scheduled for technical training after recruit training are sent to a designated 4-week fireman, airman, or seaman apprentice school and then sent directly to the fleet. It should be noted that there is a flow of students from the fleet back into the technical training pipelines. This flow, however, only amounts to about 10 percent of the yearly throughput.

SYSTEM OVERVIEW

The PAM is designed to monitor and predict the number of students at various points in Navy training pipelines. The pipelines include Recruit Training, BE/E schools, and follow-on "A" schools.

This model simulates the flow of students of a particular rating through a series of training schools. The student's rating determines which BE/E and/or "A" schools he/she attends and in what order. The following paragraphs describe the data inputs required to initiate a simulation, the outputs generated by the simulation, and the various options available within PAM.

INPUTS. In addition to the course and pipeline parameters needed to initiate each simulation (student rating, length of simulation, starting date, etc.) the input data consists of the number of students with a "school guarantee" to the particular rating arriving weekly at each RTC. The numbers of recruit accessions and Fleet Returnees are automatically determined by the PAM. In test runs of the program, the inputs have been of three forms: (1) constant number of arrivals until a certain week when the number of arrivals goes to 0 and the following weeks simply process the students already in the system, (2) constant number of arrivals throughout the simulation run, (3) continuously varying number of arrivals (this simulates most closely the "real case").



OUTPUTS. For each week of training, the number of arrivals, enrollees, students under instruction, students awaiting instruction, graduates, and attrites is calculated for each course. When the simulation run is completed, these figures are printed out in a matrix display.

SYSTEM OPTIONS

Figure 2 displays the options available in the PAM. The Special Support Subsystem (Option \$) consists of system accounting programs, error recovery programs, and initialization programs. Only options 1 and 4 of the five programs contained in this subsystem are used during normal system operations. The remainder deal with the actual program structure and are only for use by a qualified systems programmer.

The Ratings Subsystem (Option 1) allows the user to input/edit or print information on the various Navy ratings. Included in this information is the pipeline for the particular rating and any pertinent comments the user desires to enter about that rating.

The Course Subsystem (Option 2) affords the user the capability to enter, edit or print the applicable course information. This information is the course descriptive data contained in the Master Course Reference File (MCRF) and is obtained from the Navy Integrated Training Resources and Administration System (NITRAS).

The Statistics Subsystem (Option 3) enables the user to insert the appropriate statistical data (i.e., arrivals, enrollees, students under instruction, attrites, graduates) by course data processing (CDP) number for all courses in the various pipelines. The outputs generated by the simulation runs are also stored in this area and available for use as "initial conditions" for future simulations.

The Simulation Subsystem (Option 4) offers the user the means to input the weekly arrivals data, run a simulation of the Pipeline Analysis Model, and generate an output report giving the results of a simulation run.

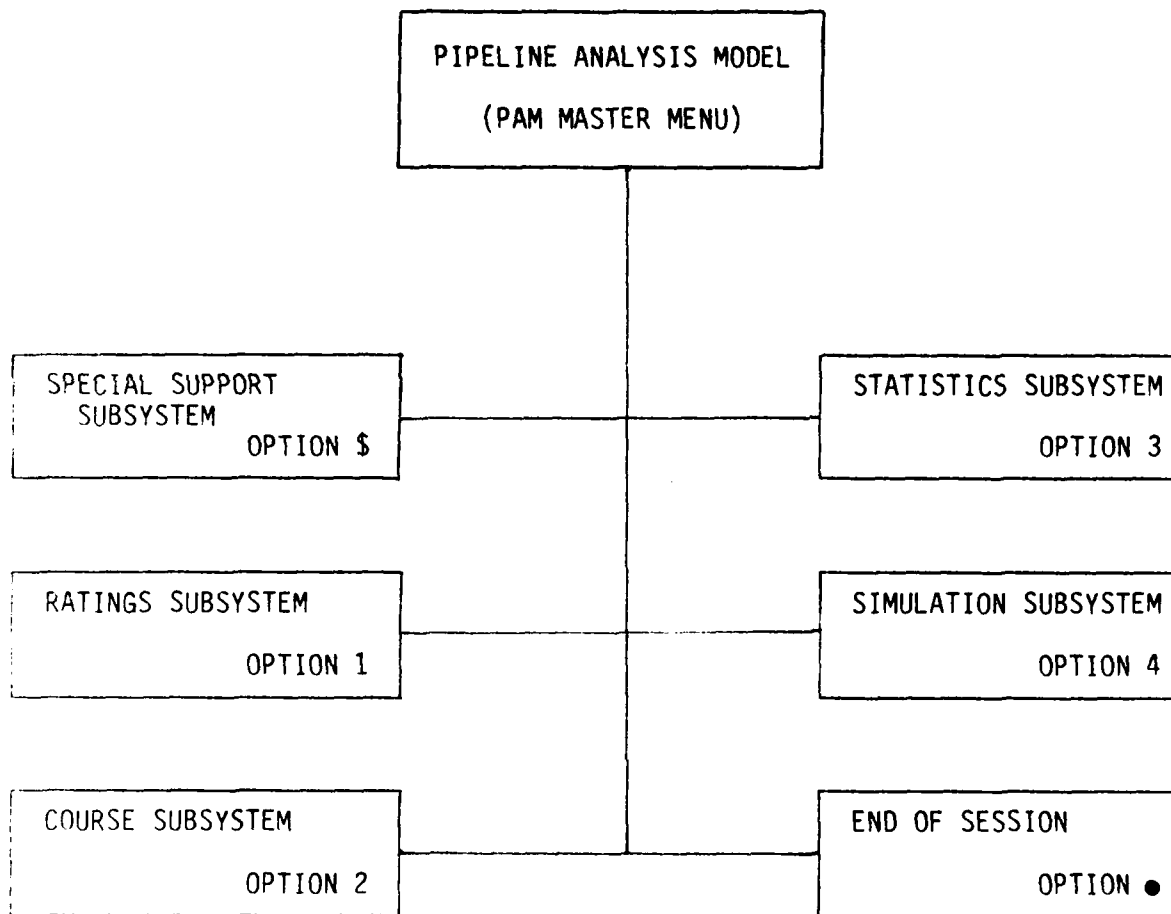


Figure 2. Pipeline Analysis Model (PAM) Master Menu

SECTION III

OPERATING PROCEDURES

It is assumed that the required computer hardware (CRT, Disk Drive, and Line Printer) is available to the personnel intending to use the PAM. Initializing the equipment is an extremely easy task. However, because of the many equipment configurations that are possible, it is desirable to have personnel knowledgeable in WANG equipment set up the system for subsequent use. When the system has been set-up, the following will appear on the CRT display:

```
READY (BASIC -2)
```

To load the Pipeline Analysis Model, the user must type in the following command(s):

```
Select Disk XXX(*)      (RETURN)
Load Run                (RETURN)
```

* Where "XXX" is replaced by the appropriate disk address.

Upon completion of the above step, the following display will appear on the screen:

```
2200VP/MVP Disk PGM Selection Menu
```

```
_____
```

```
_____
```

```
_____
```

```
PAM: Pipeline Analysis Model
```

```
_____
```

```
_____
```


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After selecting the Pipeline Analysis Model and pressing RETURN (EXEC) the following will appear:

Pipeline Analysis Model

Please Enter Today's Date (mmddyy): _____

To continue, the date must be entered as a 2-digit month, 2-digit day, 2-digit year. (The numeral 0 must precede any single-digit month or day; for example, April 4, 1982 should appear as 040482.) When the date has been entered (no RETURN necessary), the next request will appear:

Please Enter Printer Address: _____

A 3-digit address for the desired printer must be entered. Upon entry the next request will appear:

Please Enter the Disk Address of
PAM System Programs: _____

This is requesting the 3-digit address of the disk where the PAM system programs are stored. Upon entry the next request to appear will be:

Please Enter the Disk Address of
PAM RATING FILE: _____

Entry of the appropriate disk address where the RATING data file is located will cause the appearance of the request for the disk address of the Course File and Statistics File in the same manner.

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None of the above requests require a RETURN after entry. RETURN alone will default the particular request to the value showing on the screen (which is the value entered at the last use of the PAM program).

Following entry of the above system specifications, the final requests of this section will appear:

| |
|----------------------------------|
| Please Enter Your User ID: _____ |
| Please Enter Password: _____ |

The user ID can be any sequence of alphanumerics up to 10 characters. Usually the operator enters his/her first or last name or initials.

The password is an eight character code which must be entered by all users before the system will continue to the next section. The password must be defined at system installation time and is programmed into the system. Once the user ID and password have been entered the screen will display:

| | |
|-----------------------------|----------------------|
| Pipeline Analysis Model | |
| PAM Master Menu | Release 1.0 |
| Enter Desired Option: _____ | |
| <u>Option</u> | <u>Subsystem</u> |
| 5 | Special Support |
| 1 | RATINGS Subsystem |
| 2 | COURSE Subsystem |
| 3 | STATISTICS Subsystem |
| 4 | SIMULATION Subsystem |
| • | End of Session |

The above display is called the PAM Master Menu. It is the beginning and end of all subsystem operations. From this menu the user may select any one of the five available options.

When the system is used for the first time, all of the system data files must be initialized; otherwise any attempts to use the system will

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result in some error message. To initialize all the system data files, option 4, Reinitialize Files, of the Special Support Subsystem described in the next section must be executed. Once all the initializations are completed the user should return to the PAM Master Menu. The user now may proceed to enter data, perform calculations, and generate reports.

The remainder of this report describes the procedures for operating each of the subsystems available with the PAM.

SPECIAL SUPPORT SUBSYSTEM (PAM MASTER MENU OPTION \$)

Figure 3 shows the various options available to the user of the PAM Special Support Subsystem.

Selecting option \$, Special Support Subsystem, from the PAM Master Menu will cause the system to display:

| Pipeline Analysis Model | | | |
|--------------------------------|-------------------------|--------|--|
| Special Support Subsystem Menu | | | |
| Option | System Accounting Prgms | Option | Initialize & Rebuild Files |
| 1 | RESET User Table | 4 | Reinitialize Files |
| | | \$ | <u>Special Application Prgms</u> Load Special Application |
| | | • | Return to Master Menu |
| Enter desired option: _____ | | | |

OPTION 1, RESET USER TABLE. Selecting option 1 from the Special Support Subsystem Menu will result in the following display:

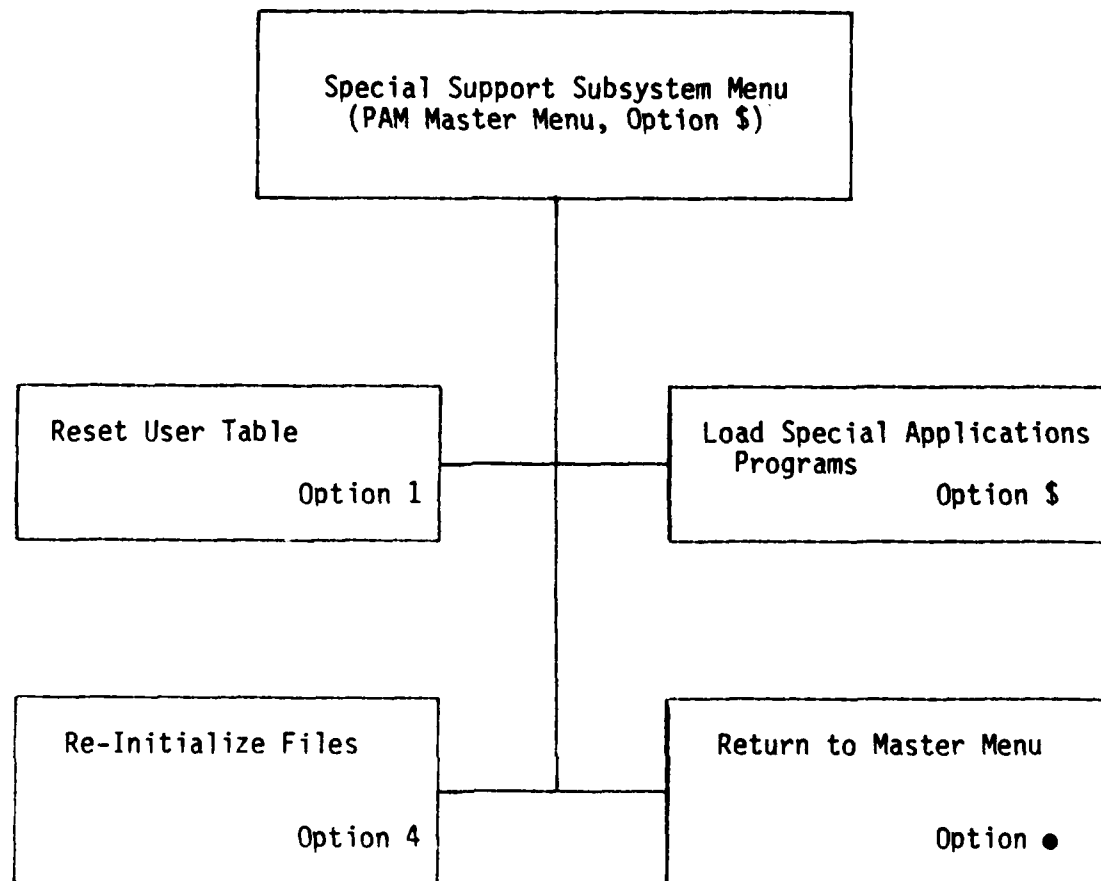


Figure 3. Special Support Subsystem Menu

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PAM: RESET USER TABLE

04/04/82 S:16

- * This program will reset the user access table for ALL users of the
- * system. Because of the completeness of this procedure, please go
- * tell any other users to end their session before you continue with
- * this program.

ENTER NEW OVERRIDE PASSWORD

#####

NOTE

Having to re-set the user access table should not become normal procedure. If you find that you are using this option often, it may be an indication of a more serious problem. Please review your operating procedure and be sure you always return to the MASTER MENU and execute the option 'End of Session.'

The user should enter "SYSTEM" bringing the following:

PAM: RESET USER TABLE

04/04/82 S:16

Option: (R-reset, C-change address, S-skip sta, E-skip remaining sta.)?-

| Station: 1 (User) | ID | Filename | Address | Type |
|-------------------|----|----------|---------|------|
| | 1 | | | DATA |
| | 2 | | | DATA |
| | . | | | . |
| | . | | | . |
| | . | | | . |
| | 16 | | | DATA |

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For each of the 16 stations, the user ID entered by the user at that station is shown in the (USER) space followed by the ID number, file name, and disk address of all files currently "open" at that station. The user then selects the desired action to be taken at that station from the options listed on the screen.

Option "R" resets, or closes the files open at that user station and automatically displays the status of the next user station. Option "S" (skip) takes no action on that user station and automatically displays the status of the next user station. Option "E" (skip remaining) takes no action on the current user station and skips the presentation of the rest of the user stations' status. Option "C" (change addresses) offers the opportunity to change the disk address of any of the files listed as "open" at that user station. If this option is selected a request will appear:

Enter ID number of address to be changed: (0 to END) _____

Entry of an ID number (1 to 16) will move the cursor to the appropriate file address in the list and the user can enter a new disk address. Entry of "0" as an ID number will indicate that the user is finished changing addresses.

When use of the above options has been completed (i.e., all 16 user stations have been checked), the following will appear:

PAM: RESET USER TABLE

DATE S:1

Do you wish to reset table of current users? (Y or N) _____

Station

User's Name

1

2

.

.

.

16

In the column headed "User's Name" will be a list of the user ID's currently entered at the 16 stations. Answering Y (Yes) will cause all stations' users to be logged-off by the system. Answering N (No) will abort the resetting mechanism at this point and any current users will remain logged-on the system. In either case, the user is transferred immediately back to the Special Support Subsystem Menu.

OPTION 4, RE-INITIALIZE FILES. Selecting option 4 from the Special Support Subsystem Menu will cause the following display to appear:

```

PAM:  SYSTEM DATA FILE INITIALIZATION

Subsystem Name      File Name      Key      Type      Size      Address

* * Enter 'GO' to start initializing procedures * *

!filename!key!type!sctr/rec!rec len!blk fctr!key len!strt key!kfam yr!
!      !      !      !      !      !      !      !      !      !

```

Listed in this table will be all of the files used by the PAM System. Given for each will be: the file's descriptive name, the file's KFAM-7 format name, the number of Keys defined for the file, the file's type (data, link, KFAM7), the size currently assigned to it, and its disk address.

Using RETURN to move forward and RECALL to move backward, the user can change the size or disk address shown for any of the system's files.

Also displayed at the bottom of the screen will be more detailed file description information for one file at a time (the file currently indicated for changes in size or address). Use of RECALL will eventually bring the user back to the Special Support Subsystem Menu.

Entering "GO" at any point will cause the file initialization process to begin. The system will reset to "blank" all information stored in all logical records of all the data files listed on the screen. The completeness and irreversibility of this process indicate that it should rarely be utilized and all preliminary warning messages heeded. If only 1 (or more) files need to be re-initialized, the user should enter "Z" for size of any files not to be re-initialized then the actual file size for the file (or files) to be reinitialized. Upon entering "GO" those files indicated will be reinitialized, while the rest are skipped. When the files have all been reinitialized, the system will return automatically to the Special Support Subsystem Menu.

Option \$, Load Special Applications. Selecting option \$ from the Special Support Subsystem Menu will result in the following request:

Enter Program Name: _____

At this time the user may enter the name of a program which is not a resident part of the PAM System but may use the common variables and subroutines to facilitate some special purpose application. This option allows usage of rarely-run special applications which may then make use of any files, subprograms, or other resident features of the PAM System. The user is responsible for providing a program-controlled exit out of the special application program back to the Special Support Subsystem Menu.

RATINGS SUBSYSTEM (PAM MASTER MENU OPTION 1)

Figure 4 shows the various options available to the user of the PAM Ratings Subsystem.

Selecting option 1, Ratings Subsystem, from the PAM Master Menu will cause the system to display:

Pipeline Analysis Model

04/04/82 S:1

Ratings Subsystem Menu

| <u>Option</u> | <u>Subsystem</u> |
|---------------|------------------------------|
| 1 | Input/Edit RATINGS Data |
| 2 | Print RATINGS Data |
| 3 | Restore Default RATINGS Data |
| • | Return to Master Menu |

Enter Desired Option:

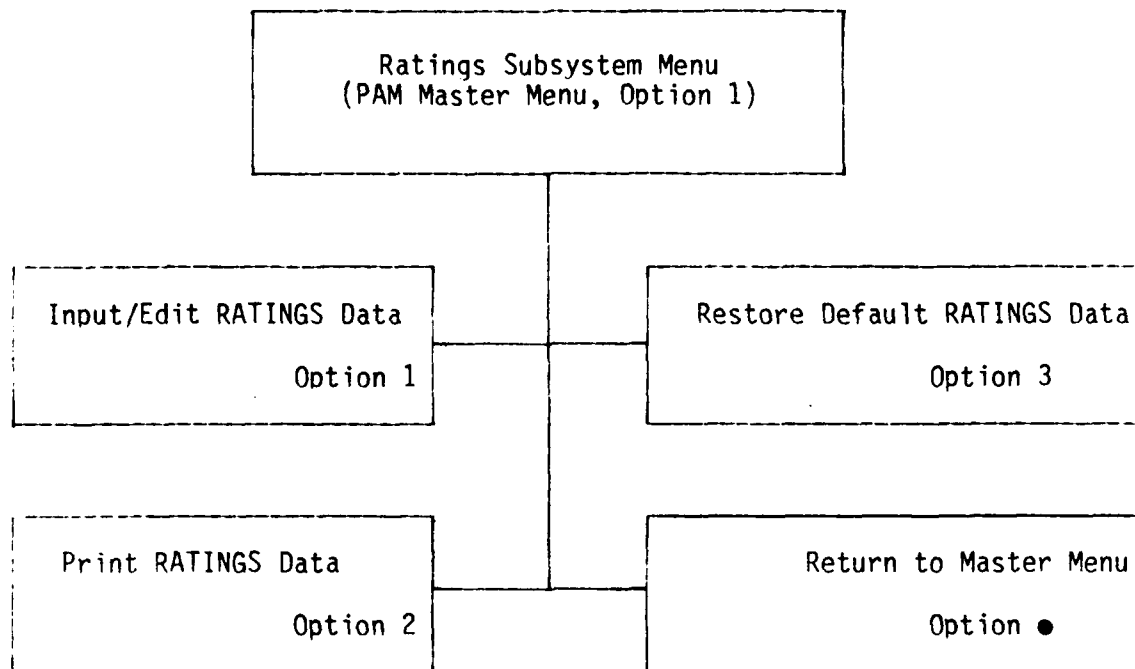


Figure 4. RATINGS Subsystem Menu

OPTION 1, INPUT/EDIT RATINGS DATA. Selecting option 1 from the Ratings Subsystem Menu will result in the following explanatory message appearing on the screen reminding the user of the implications of altering the DEFAULT File:

| | |
|--|-------------------|
| Pipeline Analysis Model | RATINGS Subsystem |
| <p>Input/Edit RATINGS Data</p> <p>This program will allow you to Add, Edit, or Delete records from the RATINGS data file or the DEFAULT RATINGS File.</p> <p>Remember that if the DEFAULT RATINGS File is updated, the new values will be used for the next execution of the Restore Default Values option.</p> <p>If you wish to Input/Edit the RATINGS File, press RETURN to continue.</p> <p>If you wish to Input/Edit the DEFAULT RATINGS File, enter the word "DEFAULT" to continue.</p> <p style="text-align: center;">#####</p> | |

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Upon pressing RETURN the following will then appear:

| | | | |
|--|---|--------------------------------------|--|
| PIPELINE ANALYSIS MODEL | | RATINGS INPUT/EDIT MENU 04/04/82 S:1 | |
| Throughout the rest of this run of the Input/Edit program, the name "Rating" refers to the RATING file. | | | |
| Option | ! | Update Menu | |
| 1 | ! | INPUT a new Rating record | |
| 2 | ! | EDIT an existing Rating record | |
| 3 | ! | DELETE an existing Rating record | |
| • | ! | Return to Ratings Subsystem Menu | |
| Please enter desired option: _____ | | | |

If "DEFAULT" was entered on the screen on the previous page, then this display will appear next:

| | | | |
|--|---|--------------------------------------|--|
| PIPELINE ANALYSIS MODEL | | RATINGS INPUT/EDIT MENU 04/04/82 S:1 | |
| Throughout the rest of this run of the Input/Edit program, the name "Rating" refers to the DEFAULT RATING file. | | | |
| Option | ! | Update Menu | |
| 1 | ! | INPUT a new Rating record | |
| 2 | ! | EDIT an existing Rating record | |
| 3 | ! | DELETE an existing Rating record | |
| • | ! | Return to Ratings Subsystem Menu | |
| Please enter desired option: _____ | | | |

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Entering option 1, INPUT a new rating record, from the Input/Edit Menu will result in the following display:

| | |
|--|----------------------------|
| ***Pipeline Analysis Model | Input/Edit Ratings File*** |
| Enter Key for Ratings record to be Inputted. | |
| Enter RATING abbreviation or RETURN (to return to menu): _____ | |

Pressing RETURN will return the user to the RATINGS Input/Edit Menu. Entry of a RATING abbreviation will initiate creation of a record for that RATING bringing the following screen:

| | | |
|---|--------------------------|--------------|
| PIPELINE ANALYSIS MODEL | RATING INPUT/EDIT SCREEN | 04/04/82 S:1 |
| (1) Abbreviation: (RATING just entered) | | |
| (2) | Full Name: | _____ |
| (3) | Pipeline: | _____ |
| (4) | | _____ |
| (5) | | _____ |
| (6) | | _____ |
| (7) | Parallel Schools: | _____ |
| (8) | Comments: | _____ |
| RETURN-edit next line A-abort, return to I/E MENU, S-save, return to I/E MENU, H-Help. Please enter # of line to be edited or above option: _____ | | |

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Selecting H, to view the Help files, will cause the following screen to appear:

| PIPELINE ANALYSIS MODEL | RATINGS HELP SCREEN | Release 1.0 |
|--|---------------------|-------------|
| <p>(1) Abbreviation: RATING ABBREVIATION TO BE USED, =10 CHARACTERS</p> <p>(2) Full Name: ENTIRE NAME OF RATING, =40 CHARACTERS</p> <p>(3-6) Pipeline: COURSES THAT THIS RATING MUST ATTEND</p> <p>(7) Parallel Schools: LIST OF PARALLEL A-SCHOOLS, MUST BE ENTERED, AND SEPARATED BY TWO SPACES; i.e., 9001-1 9002-1 9003-1</p> <p>(8) Comment: USER INFORMATION FOR THIS RATING. NOT USED IN PROGRAM MANIPULATIONS.</p> <p>Please press RETURN to return to INPUT/EDIT RATINGS SCREEN</p> | | |

Examples of a completed rating record are contained in appendix A.

Entering option 2, EDIT an existing record, from the Input/Edit Menu will result in the following display:

| | |
|---|----------------------------|
| ***PIPELINE ANALYSIS MODEL | INPUT/EDIT RATINGS FILE*** |
| <p>Enter Key for Ratings record to be Edited.</p> <p>Enter RATING abbreviation or RETURN: _____</p> | |

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Pressing RETURN will return you to the RATINGS Input/Edit Menu, while entry of a RATING abbreviation will initiate editing of the record for that RATING bringing the following screen:

| PIPELINE ANALYSIS MODEL | RATING INPUT/EDIT SCREEN | 04/04/82 S:1 |
|---|-------------------------------------|--------------|
| (1) | Abbreviation: (RATING just entered) | |
| (2) | Full Name: _____ | |
| (3) | Pipeline: _____ | |
| (4) | _____ | |
| (5) | _____ | |
| (6) | _____ | |
| (7) | Parallel Schools: _____ | |
| (8) | Comments: _____ | |
| RETURN-edit next line A-abort, return to I/E MENU, S-save, return to I/E MENU, H-Help. Please enter # of line to be edited or above option: | | |

In this case all of the data categories will show the current values stored in that RATING record. The various values can then be edited as desired.

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Selecting H, to view the Help files, will produce the following display:

| PIPELINE ANALYSIS MODEL | RATINGS HELP SCREEN | Release 1.0 |
|---|---------------------|-------------|
| <p>(1) Abbreviation: RATING ABBREVIATION TO BE USED, =10 CHARACTERS</p> <p>(2) Full Name: ENTIRE NAME OF RATING, =40 CHARACTERS</p> <p>(3-6) Pipeline: COURSES THAT THIS RATING MUST ATTEND</p> <p>(7) Parallel Schools: LIST OF PARALLEL A-SCHOOLS, MUST BE ENTERED, AND SEPARATED BY TWO SPACES; i.e. 9001-1 9002-1 9003-1</p> <p>(8) Comment: USER INFORMATION FOR THIS RATING. NOT USED IN PROGRAM MANIPULATIONS.</p> <p>Please press RETURN to return to INPUT/EDIT RATINGS SCREEN</p> | | |

Entering Option 3, DELETE an existing rating record, from the Input/ Edit Menu will result in the following display:

| | |
|--|----------------------------|
| ***PIPELINE ANALYSIS MODEL | Input/Edit RATINGS FILE*** |
| Enter KEY for Ratings record to be Deleted. (starting) | |
| Enter RATING abbreviation or RETURN (to return to Menu): _____ | |

The RATING abbreviation of the first record to be deleted should be entered here. This will bring a request to:

| | |
|--|----------------------------|
| ***PIPELINE ANALYSIS MODEL | Input/Edit RATINGS FILE*** |
| Enter KEY for Rating record to be Deleted. (ending) | |
| Enter RATING abbreviation or RETURN (to return to Menu): _____ | |

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The RATING abbreviation of the last record to be deleted should be entered here. The following display will result:

| | |
|---|--------------|
| ***PAM RATING File: <u>Delete Mode</u> | 04/04/82 S:1 |
| <hr/> | |
| The Keys below will be DELETED. Do you wish to continue? Y or N | |
| <hr/> | |
| <hr/> | |
| <hr/> | |
| <hr/> | |
| <hr/> | |
| <hr/> | |
| <hr/> | |

Listed will be the previously specified "starting" and "ending" RATINGS as well as the keys for all records found in between these two. This entire set of records will be scheduled for deletion. Answering N (No) will abort the deletion process and return the user once again to the RATINGS Input/Edit Menu. Answering Y (Yes) will cause the deleted keys to disappear from the screen one at a time and the following message to appear:

| |
|---|
| Do you wish to continue in Delete mode? (Y or N) ____ |
|---|

Answering Y (Yes) will cause the requests for "starting and ending KEYS to be DELETED" to reappear on the screen and additional sets of records may be deleted. Answering N (No) will once again return the user to the RATINGS Input/Edit Menu.

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OPTION 2, PRINT RATINGS DATA. Selecting option 2 from the Ratings Subsystem Menu will result in the following display:

Print RATING Data

This program will print or display the contents of the RATINGS data file or the DEFAULT RATINGS file.

If you wish to print the RATINGS data file, press RETURN to continue.

If you wish to print the DEFAULT RATINGS file, enter the word "DEFAULT" to continue.

Pressing RETURN will activate the following:

PAM: PRINT RATINGS FILE:

DESIRED OUTPUT DEVICE: _____

If, instead, "DEFAULT" was entered, then the following will appear:

PAM: PRINT DEFAULT RATINGS FILE:

DESIRED OUTPUT DEVICE: _____

The user should enter the 3-digit address of the desired printer. RETURN will default the address to the one showing on the screen (the address selected the last time the program was run).

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If 005 is entered as the printer address, the contents of the RATINGS File will be displayed on the CRT screen, one RATING at a time, as follows:

| | |
|--|--------|
| PAM: PRINT RATINGS FILE: | Page:1 |
| Abbreviation: _____ | |
| Rating Name: _____ | |
| _____ | |
| Comments: _____ | |
| _____ | |
| Instruction Pipeline: | |
| _____ | |
| _____ | |
| _____ | |
| _____ | |
| _____ | |
| Press RETURN to continue, RECALL to stop | |

If the address of an appropriate printer is entered, the contents of the RATINGS File will be output as hard copy, three RATINGS to a page (see appendix B for sample output). While this is being printed, the screen will display the message: "Press ANY key to halt printing." If any key on the keyboard is hit, the printer will stop (after finishing the current RATING record) and the following message will appear on the screen:

| |
|--|
| PAM: PRINT RATINGS FILE: |
| *****INTERRUPT***** |
| You have halted printing of the data. |
| Do you wish to continue? (Y or N) ____ |

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If the user enters Y (Yes) then the printer will resume printing (picking up where it left off) and the "Press any key to halt" message will appear once again. If the user enters N (No) then the screen will display:

In response to your interrupt we are returning to the RATINGS
Subsystem Menu

The next screen to appear will be the RATINGS Subsystem Menu (see p. 19).

In the cases of both CRT display and printed hard-copy output, when the last RATINGS record has been output, hitting RETURN the next time will activate the following message:

END OF FILE Hit any key to return to RATINGS Subsystem Menu

When any key on the keyboard has been pressed, the user will return once again to the RATINGS Subsystem Menu.

OPTION 3, RESTORE DEFAULT RATINGS DATA. Selecting option 3 from the Subsystem Menu will cause the following explanatory message to appear on the screen summarizing what will occur during the Restore Default Values operation:

PIPELINE ANALYSIS MODEL

RATINGS Subsystem

**** Restore Default Values ****

Each record in the RATINGS File will be set equal to the corresponding record in the DEFAULT RATINGS File. If no corresponding record exists in the DEFAULT RATINGS File you will have the option of creating one.

Do you wish to display or print the contents of the DEFAULT RATINGS File before continuing? (Y or N) ____

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Answering Y (Yes) will transfer the user immediately to the beginning of the PRINT RATING data operation (see RATING Subsystem, Option 2, p. 27). The user may then print or display the contents of the DEFAULT RATINGS File and use the menu system to once more return to the Restore Default RATINGS Values operation if he wishes.

Answering N (No) will cause the system to proceed with restoring the Default Values. As each record in the RATING File is processed a message will appear on the screen: "Restoring RATING: _____", until the entire file has been completed.

If any record is encountered without a corresponding DEFAULT File record, the following screen will appear:

| Pipeline Analysis Model | RATING Subsystem |
|---|------------------|
| <p>***Restore Default Values***</p> <p>No DEFAULT record exists for this RATING.</p> <p>You may:</p> <ol style="list-style-type: none">1. Leave the record for this RATING unchanged and leave the DEFAULT File with no record for this RATING.2. Leave the record for this RATING unchanged and create a record in the DEFAULT File (from this RATING record).3. Delete this record from the RATING File.4. Leave the record for this RATING unchanged and Create a record in the DEFAULT File (using the RATING Input/Edit Option). <p>Please enter # of option desired: _____</p> <p>RATING ABBREV: _____</p> | |

Selecting options 1, 2, or 3 will perform the designated operations and continue with the Restore Default procedure. Selection of option 4 will transfer the user to the RATING Subsystem Menu, where the Input/Edit option can be used to create the DEFAULT RATING record desired. The menu system may then be utilized to return once more to the Restore Default RATINGS values operation.

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When all records in the RATINGS File have been processed, the following message will appear:

.....DEFAULT RESTORATION COMPLETE.....

Please hit RETURN to return to RATINGS Subsystem Menu

When the RETURN key has been pressed, the user will return once again to the RATINGS Subsystem Menu.

COURSE SUBSYSTEM (PAM MASTER MENU OPTION 2)

Figure 5 shows the various options available to the user of PAM Course Subsystem.

Selecting option 2, Course Subsystem, from the PAM Master Menu will result in the following display:

Pipeline Analysis Model

04/04/82 S:1

Course Subsystem Menu

| <u>Option</u> | <u>Subsystem</u> |
|---------------|-----------------------------|
| 1 | Input/Edit COURSE Data |
| 2 | Print COURSE Data |
| 3 | Restore Default COURSE Data |
| • | Return to Master Menu |

Enter Desired Option: _____

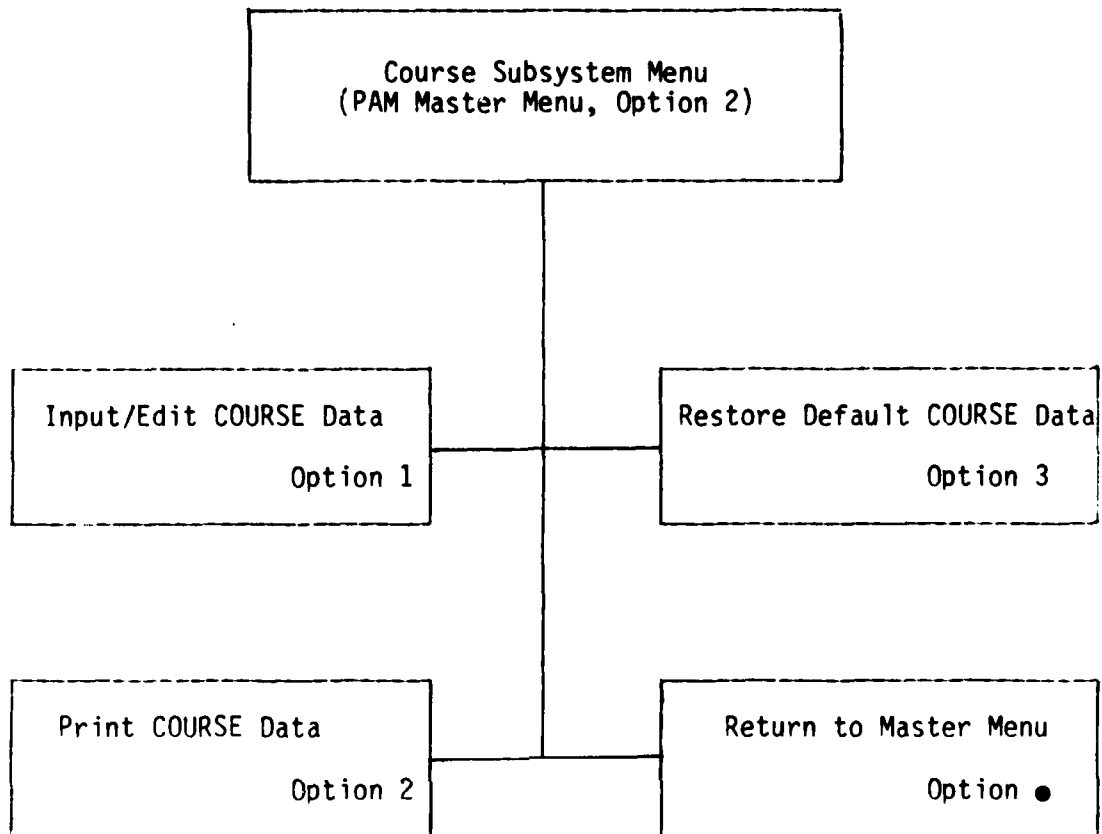


Figure 5. COURSE Subsystem Menu

OPTION 1, INPUT/EDIT COURSE DATA. Selecting option 1 from the Course Subsystem Menu will result in the following explanatory message appearing on the screen reminding the user of the implications of altering the DEFAULT File:

| | |
|---|------------------|
| Pipeline Analysis Model | COURSE Subsystem |
| <p align="center">Input/Edit COURSE Data</p> <p>This program will allow you to Input, Edit, or Delete records from the COURSE data file or the Course Default File.</p> <p>Remember that if the DEFAULT COURSE File is updated, the new values will be used for the next execution of the Restore Default Values option.</p> <p>If you wish to Input/Edit the COURSE File, press RETURN to continue.</p> <p>If you wish to Input/Edit the DEFAULT COURSE File, enter the word "DEFAULT" to continue.</p> <p align="center">_____</p> | |

Upon pressing RETURN the following will then appear:

| PIPELINE ANALYSIS MODEL | COURSE INPUT/EDIT MENU | 04/04/82 S:1 | | | | | | | | | | | | | | | |
|---|------------------------|----------------------------------|--------|---|-------------|---|---|---------------------------|---|---|--------------------------------|---|---|----------------------------------|---|---|---------------------------------|
| <p>Throughout the rest of this run of the Input/Edit program, the name "Course" refers to the COURSE file.</p> <table border="1"> <thead> <tr> <th>Option</th> <th>!</th> <th>Update Menu</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>!</td> <td>INPUT a new Course record</td> </tr> <tr> <td>2</td> <td>!</td> <td>EDIT an existing Course record</td> </tr> <tr> <td>3</td> <td>!</td> <td>DELETE an existing Course record</td> </tr> <tr> <td>•</td> <td>!</td> <td>Return to COURSE Subsystem Menu</td> </tr> </tbody> </table> <p>Please enter desired option: #</p> | | | Option | ! | Update Menu | 1 | ! | INPUT a new Course record | 2 | ! | EDIT an existing Course record | 3 | ! | DELETE an existing Course record | • | ! | Return to COURSE Subsystem Menu |
| Option | ! | Update Menu | | | | | | | | | | | | | | | |
| 1 | ! | INPUT a new Course record | | | | | | | | | | | | | | | |
| 2 | ! | EDIT an existing Course record | | | | | | | | | | | | | | | |
| 3 | ! | DELETE an existing Course record | | | | | | | | | | | | | | | |
| • | ! | Return to COURSE Subsystem Menu | | | | | | | | | | | | | | | |

If "DEFAULT" was entered on the previous screen, then this display will appear next:

| | | |
|--|------------------------|----------------------------------|
| PIPELINE ANALYSIS MODEL | COURSE INPUT/EDIT MENU | 04/04/82 S:1 |
| <p>Throughout the rest of this run of the Input/Edit program, the name "Course" refers to the DEFAULT COURSE File.</p> | | |
| Option | ! | Update Menu |
| 1 | ! | INPUT a new Course record |
| 2 | ! | EDIT an existing Course record |
| 3 | ! | DELETE an existing Course record |
| • | ! | Return to COURSE Subsystem Menu |
| Please enter desired option: # | | |

Entering option 1, INPUT a new course record, from the Input/Edit Menu will result in the following display:

| | |
|---|---------------------------|
| ***Pipeline Analysis Model | Input/Edit Course File*** |
| Enter KEY for Course record to be Inputted | |
| Enter CDP Number or RETURN (to Return to Menu): _____ | |
| Enter Block Number: _____ | |

Selecting RETURN will return you to the COURSE Input/Edit Menu. Entry of a (4-digit) CDP# followed by a (1-digit) Block # will initiate creation of a record for that COURSE bringing the following screen:

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| PIPELINE ANALYSIS MODEL | | COURSE INPUT/EDIT SCREEN | | 04/04/82 S:1 | |
|--------------------------------|-----------------------|--------------------------|-------|---------------|---|
| (1) | CDP#: | Block #: | CIN#: | Type: | |
| (2) | Course Title: | | | Length: | |
| (3) | Location: | | | Setback rate: | % |
| (4) | Maximum no. students: | Attrition rate: | % | | |
| Convening Schedule (mm/dd/yy): | | | | | |
| (5) | | | | | |
| (6) | | | | | |
| (7) | | | | | |
| (8) | | | | | |
| (9) | | | | | |
| (10) | | | | | |
| (11) | | | | | |
| (12) | | | | | |
| (13) | | | | | |
| (14) | | | | | |
| (15) | | | | | |

RETURN-edit next line, A-abort, S-save record, C-clear convenings, H-help
Please enter # of line to be edited or above option:

Selecting H, to view the HELP files, will cause the following display to appear:

| PIPELINE ANALYSIS MODEL | | COURSE HELP SCREEN | | Release 1.0 | |
|-------------------------|-----------------------|--|--|-------------|--|
| (1) | CDP#: | FOUR DIGIT NUMBER OF COURSE | | | |
| | BLOCK #: | ONE DIGIT NUMBER, 1 IF NOT BE/E COURSE | | | |
| | CIN #: | COURSE IDENTIFICATION NUMBER | | | |
| (2) | Course Title: | FULL NAME OF COURSE, =24 CHARACTERS | | | |
| | Type: | F=AVIATION FUNDAMENTALS, B=BE/E SCHOOL, A=A SCHOOL, R=RTC SCHOOL | | | |
| (3) | Location: | PLACE WHERE INSTRUCTION TAKES PLACE | | | |
| (4) | Maximum no. students: | LIMIT ON NUMBER OF STUDENTS | | | |
| | Attrition rate: | PERCENT RATE FAILURE | | | |
| | Setback rate: | PERCENT RATE OF STUDENTS WHO MUST TAKE CLASS OVER | | | |
| (5-15) | Convening Schedule: | FRIDAY OF WEEK WHEN CLASS(ES) START | | | |

Please press RETURN to return to INPUT/EDIT COURSE MENU

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An example of a completed course record is contained in appendix C.

Entering option 2, EDIT an existing record, from the course Input/Edit Menu will result in the following display:

***PIPELINE ANALYSIS MODEL Input/Edit COURSE FILE

Enter KEY for course record to be Edited.

Enter CDP Number or RETURN (to return to Menu): _____

Enter Block Number: _____

Pressing RETURN will return you to the COURSE Input/Edit Menu, while entry of a CDP#, followed by a Block #, will initiate editing of the record for that COURSE by bringing the following screen:

PIPELINE ANALYSIS MODEL COURSE INPUT/EDIT SCREEN Release 1.0

(1) CDP#: Block#: CIN#:
(2) Course Title: Type:
(3) Location: Length:
(4) Maximum no. students: Attrition rate: % Setback rate: %

Convening Schedule (mm/dd/yy):

(5)
(6)
(7)
(8)
(9)
(10)
(11)
(12)
(13)
(14)
(15)

RETURN-edit next line, A-abort, S-save record, C-clear convenings, H-help
Please enter # of line to be edited or above option:

In this case all of the data categories will show the current values stored in that COURSE record. The various values can then be edited as desired.

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Selecting H, to view the Help files, will cause the following screen to appear:

| PIPELINE ANALYSIS MODEL | COURSE HELP SCREEN | Release 1.0 |
|--|--------------------|-------------|
| (1) CDP#: FOUR DIGIT NUMBER OF COURSE BLOCK #: ONE DIGIT NUMBER, 1 IF NOT BE/E COURSE CIN #: COURSE IDENTIFICATION NUMBER | | |
| (2) Course Title: FULL NAME OF COURSE, =24 CHARACTERS Type: F=AVIATION FUNDAMENTALS, B=BE/E SCHOOL, A=A SCHOOL, R=RTC SCHOOL | | |
| (3) Location: PLACE WHERE INSTRUCTION TAKES PLACE | | |
| (4) Maximum no. students: LIMIT ON NUMBER OF STUDENTS Attrition rate: PERCENT RATE FAILURE Setback rate: PERCENT RATE OF STUDENTS WHO MUST TAKE CLASS OVER | | |
| (5-15) Convening Schedule: FRIDAY OF WEEK WHEN CLASS(ES) START | | |
| Please press RETURN to return to INPUT/EDIT COURSE MENU | | |

Entering option 3, DELETE an existing record, from the course Input/Edit Menu will result in the following display:

| ***PIPELINE ANALYSIS MODEL | Input/Edit COURSE FILE |
|---|------------------------|
| Enter KEY for Course record to be deleted. (starting) | |
| Enter CDP Number or RETURN (to return to Menu): _____ | |
| Enter Block Number: _____ | |

The COURSE CDP# and Block # of the first record to be deleted should be entered here. This will cause the following screen to appear:

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***PIPELINE ANALYSIS MODEL

Input/Edit COURSE FILE

Enter KEY for Course record to be deleted. (ending)

Enter CDP Number or RETURN (to return to Menu): _____

Enter Block Number: _____

The CDP# and Block # of the last record to be deleted should be entered here. The following display will result:

***PAM COURSE File: Delete Mode

04/04/82 S:1

The Keys below will be DELETED. Do you wish to continue? (Y or N) ____

Listed will be the previously specified "starting" and "ending" COURSES as well as the keys for all records found in between these two. This entire set of records will be scheduled for deletion. Answering N (No) will abort the deletion process and return the user once again to the COURSE Input/Edit Menu. Answering Y (Yes) will cause the deleted keys to disappear from the screen one at a time and the following message to appear:

Do you wish to continue in Delete mode? (Y or N) ____

Answering Y (Yes) will cause the requests for "starting and ending KEYS to be DELETED" to reappear on the screen and additional sets of records may be deleted. Answering N (No) will once again return the user to the Course Input/Edit Menu.

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OPTION 2, PRINT COURSE DATA. Selecting option 2 from the COURSE Subsystem Menu will result in the following display:

Print COURSE Data

This program will print or display the contents of the COURSE data file or the DEFAULT COURSE file.

If you wish to print the COURSE data file, press RETURN to continue.

If you wish to print the DEFAULT COURSE file, enter the word "DEFAULT" to continue.

Pressing RETURN will activate the following:

PAM: PRINT COURSE FILE:

DESIRED OUTPUT DEVICE: _____

If, instead, "DEFAULT" was entered, then the following will appear:

PAM: PRINT DEFAULT COURSE FILE:

DESIRED OUTPUT DEVICE: _____

The user should enter the 3-digit address of the desired printer. Pressing RETURN will default the address to the one showing on the screen (the address selected the last time the program was run).

If 005 is entered as the printer address, the contents of the COURSE File will be displayed on the CRT screen, one COURSE at a time, as follows:

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PAM: PRINT COURSE FILE: Page:1

CDP - Block: _____ CIN: _____

Course Title: _____

Type: _____ Location: _____

Average Length of Instruction: _____ Maximum number of students: _____

Attrition rate: _____ Setback Rate: _____

Convening Schedule: (DATE=last day of week in which class opens)

Press RETURN to continue, RECALL to stop

If the address of an appropriate printer is entered, the contents of the COURSE File will be output as hard copy, three COURSES to a page. (See appendix D for sample output.) While this is being printed, the screen will display the message: "Press any key to halt printing." If any key on the keyboard is hit, the printer will stop (after finishing the current COURSE record) and the following message will appear on the screen:

```
PAM: PRINT COURSE FILE

***** INTERRUPT *****

You have halted printing of the data.
Do you wish to continue? (Y or N)
```

If the user enters Y (Yes) then the printer will resume printing (picking up where it left off) and the "Press any key to halt" message will reappear on the screen. If the user enters N (No) then the screen will display:

In response to your INTERRUPT we are returning to the COURSE Subsystem Menu.

The next screen to appear will be the COURSE Subsystem Menu (see p. 31).

In the cases of both CRT display and printed hard-copy output, when the last COURSE record has been output, hitting RETURN will activate the following message:

END OF FILE. HIT ANY KEY TO RETURN TO COURSE SUBSYSTEM MENU

When any key on the keyboard is pressed, the user will return once again to the COURSE Subsystem Menu.

OPTION 3, RESTORE DEFAULT COURSE DATA. Selecting option 3 from the Course Subsystem Menu will cause the following explanatory message to appear on the screen summarizing what will occur during the Restore Default Values operation:

| Pipeline Analysis Model | Course Subsystem |
|---|------------------|
| ----- | |
| **** Restore Default Values **** | |
| Each record in the COURSE File will be set equal to the corresponding record in the DEFAULT COURSE File. If no corresponding record exists in the DEFAULT COURSE File you will have the option of creating one. | |
| Do you wish to display or print the contents of the DEFAULT COURSE File before continuing: (Y or N) ____ | |

Answering Y (Yes) will transfer the user immediately to the beginning of the PRINT COURSE Data operation (see COURSE Subsystem, option "2", p. 39). The user may then print or display the contents of the DEFAULT COURSE File and use the menu system to once more return to the Restore Default COURSE Values operation if needed.

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Answering N (No) will cause the system to proceed with restoring the default values. As each record in the COURSE FILE is processed a message will appear on the screen: "Restoring....COURSE: CDP# - Block #", until the entire file has been completed.

If any record is encountered without a corresponding DEFAULT File record, the following display will appear:

| Pipeline Analysis Model | COURSE Subsystem |
|--|------------------|
| <p>***Restore Default Values***</p> <p>No DEFAULT record exists for this COURSE.</p> <p>You may:</p> <ol style="list-style-type: none">1. Leave the record for this COURSE unchanged and leave the DEFAULT File with no record for this COURSE.2. Leave the record for this COURSE unchanged and create a record in the DEFAULT File (from this COURSE record).3. Delete this record from the COURSE File4. Leave the record for this COURSE unchanged and create a record in the DEFAULT File (using the COURSE Input/Edit Option). <p>Please enter # of option desired: _____</p> | |

Selecting option 1, 2, or 3 will perform the designated operations and continue with the Restore Default procedure. Selection of option 4 will transfer the user to the COURSE Subsystem Menu, where the Input/Edit option can be used to create the COURSE DEFAULT record desired. The menu system may then be utilized to return once more to the Restore Default COURSE Values operation.

When all records in the COURSE FILE have been processed, the following message will appear:

| |
|--|
| <p>.....DEFAULT RESTORATION COMPLETE.....</p> <p>Please hit RETURN to return to COURSE Subsystem Menu.</p> |
|--|

When any key on the keyboard has been pressed, the user will return once again to the COURSE Subsystem Menu.

STATISTICS SUBSYSTEM (PAM MASTER MENU OPTION 3)

Figure 6 shows the various options available to the user of the PAM Statistics Subsystem.

Selecting option 3, Statistics Subsystem, from the PAM Master Menu will cause the system to display:

| | | |
|-----------------------------|---------------------------------|--------------|
| Pipeline Analysis Model | | 04/04/82 S:1 |
| Statistics Subsystem Menu | | |
| <u>Option</u> | <u>Subsystem</u> | |
| 1 | Input/Edit Statistics Data | |
| 2 | Print Statistics Data | |
| 3 | Restore Default Statistics Data | |
| • | Return to Master Menu | |
| Enter Desired Option: _____ | | |

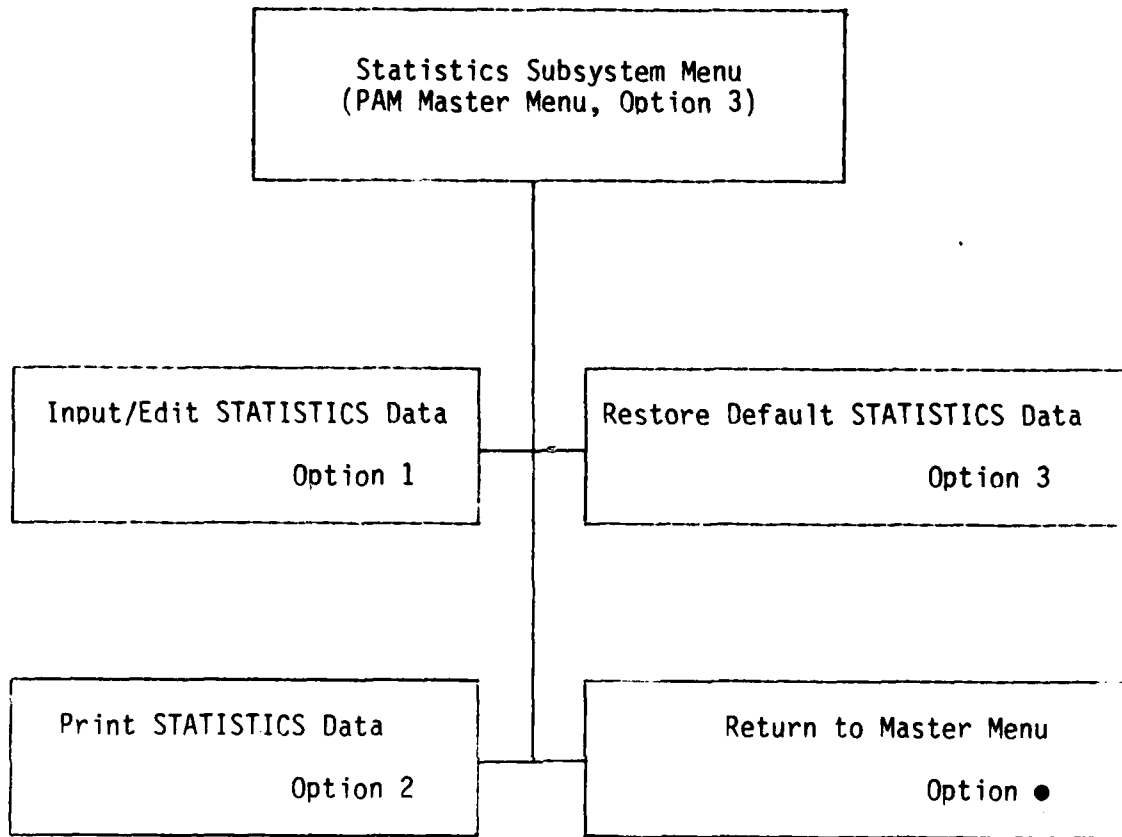


Figure 6. STATISTICS Subsystem Menu

OPTION 1, INPUT/EDIT STATISTICS DATA. Selecting option 1 from the Statistics Subsystem Menu will result in an explanatory message appearing on the screen reminding the user of the implications of altering the DEFAULT File:

| Pipeline Analysis Model | STATISTICS Subsystem |
|---|----------------------|
| <p align="center">Input/Edit STATISTICS Data</p> <p>This program will allow you to Input, Edit, or Delete records from the STATISTICS data file or the DEFAULT STATISTICS File.</p> <p>Remember that if the DEFAULT STATISTICS File is updated, the new values will be used for the next execution of the Restore Default Values option.</p> <p>If you wish to Input/Edit the STATISTICS File, press RETURN to continue.</p> <p>If you wish to Input/Edit the DEFAULT STATISTICS File, enter the word "DEFAULT" to continue.</p> <p align="center">#####</p> | |

Upon pressing RETURN the following will then appear:

| PIPELINE ANALYSIS MODEL | STATISTICS INPUT/EDIT MENU | 04/04/82 S:1 |
|--|--|--------------|
| <p>Throughout the rest of this run of the Input/Edit program, the name "Statistics" refers to the STATISTICS file.</p> | | |
| Option | Update Menu | |
| 1 | INPUT a new Statistics record | |
| 2 | EDIT an existing Statistics record | |
| 3 | DELETE an existing Statistics record | |
| 4 | DELETE a group of records of same data type and data set number | |
| 5 | CREATE a set of "I" Statistics records identical to a set of "O" records | |
| • | Return to STATISTICS Subsystem Menu | |
| <p>Please enter desired option: _____</p> | | |

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If "DEFAULT" was entered on the previous screen, then this display will appear next:

| | | | |
|---|---|--|--------------|
| PIPELINE ANALYSIS MODEL | | STATISTICS INPUT/EDIT MENU | 04/04/82 S:1 |
| Throughout the rest of this run of the Input/Edit program, the name "Statistics" refers to the DEFAULT STATISTICS file. | | | |
| Option | ! | Update Menu | |
| 1 | ! | Input a new Statistics record | |
| 2 | ! | EDIT an existing Statistics record | |
| 3 | ! | DELETE an existing Statistics record | |
| 4 | ! | DELETE a group of records of same data type and data set number | |
| 5 | ! | CREATE a set of "I" Statistics records identical to a set of "O" records | |
| • | ! | Return to STATISTICS Subsystem Menu | |
| Please enter desired option: _____ | | | |

Entering option 1, Input a new statistics record, from the Input/Edit Menu will result in the following display:

| | |
|---|-------------------------------|
| ***Pipeline Analysis Model | Input/Edit STATISTICS FILE*** |
| Enter key for STATISTICS record to be Inputted. | |
| Enter CDP number or RETURN (to return to Menu): | _____ |
| Enter Block number: | _____ |
| Enter Date (last day of week): | _____ |
| Enter Data Type (I or O): | _____ |
| Enter Data Set Number: | _____ |

Selecting RETURN will return you to the STATISTICS Input/Edit Menu. Entry of a (4-digit) CDP #, a (1-digit) Block #, the end-of-week date (mm/dd/yy), a Data Type (I or O) and a (1 -or 2-digit) Data Set # will initiate creation

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of a record containing a set of STATISTICS of the specified type for the specified course at the specified date. This will bring the following display:

| PIPELINE ANALYSIS MODEL | STATISTICS INPUT/EDIT SCREEN | Release 1.0 |
|--|------------------------------|-------------|
| (1) CDP #: _____ Block #: _____ (2) End of week date: __/__/__ Data Type: _____ Data Set #: _____ (3) ARRIVED: _____ ENROLLED: _____ (4) UNDER INSTRUCTION: _____ AWAITING INSTRUCTION: _____ (5) ATTRITES: _____ GRADUATES: _____ SETBACKS: _____ RETURN-edit next line, A-abort, return to I/E MENU, S-save, return to I/E MENU, H-HELP. Please enter # of line to be edited or above option: | | |

Selecting H, to view the HELP files, will cause the following screen to appear:

| PIPELINE ANALYSIS MODEL | STATISTICS HELP SCREEN | Release 1.0 |
|--|------------------------|-------------|
| (1) CDP#: FOUR DIGIT COURSE NUMBER BLOCK #: ONE DIGIT BLOCK NUMBER. BE/E ONLY CAN BE 1,2, OR 3 NOTE: ALL NON BE/E COURSES SHALL BE SET TO 1 (2) End of week date: FRIDAY OF WEEK OF THIS CLASS Data Type: I=INPUT, O=OUTPUT (3) ARRIVED: NUMBER OF STUDENTS ARRIVING THIS WEEK ENROLLED: NUMBER OF STUDENTS ENROLLING THIS WEEK (4) UNDER INSTRUCTION: NUMBER OF STUDENTS ENROLLED IN CLASS AWAITING INSTRUCTION: NUMBER OF STUDENTS WAITING FOR ROOM IN CLASS (5) ATTRITES: NUMBER OF FAILURES FOR THIS WEEK GRADUATES: NUMBER OF GRADUATES FOR THIS WEEK SETBACKS: NUMBER OF STUDENTS THAT MUST TAKE THIS CLASS OVER Please press RETURN to return to INPUT/EDIT STATISTICS SCREEN | | |

Examples of a completed statistics record are contained in appendix E.

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Entering option 2, EDIT an existing record, from the Input/Edit Menu will result in the following display:

***PIPELINE ANALYSIS MODEL

Input/Edit STATISTICS FILE

Enter Key for Statistics record to be Edited

Enter CDP Number or RETURN (to return to menu):

Enter Block Number:

Enter Date (last day of week):

Enter Data Type:

Enter Data Set Number:

Selecting RETURN again returns the user to the STATISTICS Input/Edit Menu, while entry of the CDP#, Block#, Date, Data Type, and Data Set # will initiate editing of that STATISTICS record bringing the following screen:

PIPELINE ANALYSIS MODEL

STATISTICS INPUT/EDIT SCREEN

Release 1.0

(1) CDP#: Block#:

(2) End of week date: / / Data Type: Data Set Number:

(3) ARRIVED: ENROLLED:

(4) UNDER INSTRUCTION: AWAITING INSTRUCTION:

(5) ATTRITES: GRADUATES: SETBACKS:

RETURN-edit next line, A-abort, return to I/E MENU, S-save, return to I/E MENU, H-HELP. Please enter # of line to be edited or above option:

In this case all of the data categories will show the current values stored in that STATISTICS record. The various values can then be edited as desired.

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Selecting H, to view the HELP files, will cause the following screen to appear:

| PIPELINE ANALYSIS MODEL | STATISTICS HELP SCREEN | Release 1.0 |
|---|------------------------|-------------|
| <p>(1) CDP#: FOUR DIGIT COURSE NUMBER Block#:ONE DIGIT BLOCK NUMBER. BE/E ONLY CAN BE 1,2, OR 3 NOTE: ALL NON BE/E COURSES SHALL BE SET TO 1</p> <p>(2) End of week date: FRIDAY OF WEEK OF THIS CLASS Data Type: I=INPUT, O=OUTPUT</p> <p>(3) ARRIVED: NUMBER OF STUDENTS ARRIVING THIS WEEK ENROLLED: NUMBER OF STUDENTS ENROLLING THIS WEEK</p> <p>(4) UNDER INSTRUCTION: NUMBER OF STUDENTS ENROLLED IN CLASS AWAITING INSTRUCTION: NUMBER OF STUDENTS WAITING FOR ROOM IN CLASS</p> <p>(5) ATTRITES: NUMBER OF FAILURES FOR THIS WEEK GRADUATES: NUMBER OF GRADUATES FOR THIS WEEK SETBACKS: NUMBER OF STUDENTS THAT MUST TAKE THIS CLASS OVER</p> <p>Please press RETURN to return to INPUT/EDIT STATISTIC SCREEN</p> | | |

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Entering option 3, DELETE an existing record, from the Input/Edit Menu will result in the following display:

| PIPELINE ANALYSIS MODEL | Input/Edit STATISTICS FILE |
|--|----------------------------|
| Enter KEY for Statistics record to be deleted (starting) | |
| Enter CDP Number or RETURN (to return to Menu): | _____ |
| Enter Block Number: | _____ |
| Enter Date (last day of week): | _____ |
| Enter Data Type: | _____ |
| Enter Data Set Number: | _____ |

The specifying variables (key) for the first STATISTICS record to be deleted should be entered here. Once the appropriate entries are made the following screen will appear:

| ***PIPELINE ANALYSIS MODEL | Input/Edit STATISTICS FILE |
|--|----------------------------|
| Enter KEY for Statistics record to be deleted (ending) | |
| Enter CDP Number or RETURN (to return to Menu): | _____ |
| Enter Block Number | : _____ |
| Enter Date (last day of week) | : _____ |
| Enter Data Type | : _____ |
| Enter Data Set Number | : _____ |

The key of the last STATISTICS record to be deleted should be entered here. After this is completed, the following display will appear:

| ***PAM STATISTICS File: <u>Delete Mode</u> | 04/04/82 S:1 |
|---|--------------|
| The Keys below will be DELETED. Do you wish to Continue? Y or N | |
| _____ | |
| _____ | |
| _____ | |
| _____ | |
| _____ | |
| _____ | |

Listed will be the keys for the previously specified "starting" and "ending" STATISTICS records as well as for all records found in between these two. This entire set of records will be scheduled for deletion. Answering N (No) will abort the deletion process and return the user once again to the STATISTICS Input/Edit Menu. Answering Y (Yes) will cause the deleted keys to disappear from the screen one at a time and the following message to appear:

Do You Wish To Continue In DELETE Mode? (Y or N) ____

Answering Y (Yes) will cause the requests for "starting and ending keys to be DELETED" to reappear on the screen and additional sets of records may be deleted. Answering N (No) will return the user to the STATISTICS Input/Edit Menu.

Entering option 4, DELETE a group of records of same data type and data set number, results in the following display:

Pipeline Analysis Model

Input/Edit STATISTICS File

This option will delete all STATISTICS records with the below specified Data Type and Data Set Number. (The end-of-week dates do not need to be entered.)

Please enter:

CDP number or RETURN (to return to Menu):
 Block number:
 Data Type (I or O):
 Data Set number:

The user must enter the (4-digit) CDP number and (1-digit) Block number to specify a course, then the Data Type and Data Set number of the group of records to be deleted. This will result in the same display of the keys to be deleted that is described under Option 3 (see p. 50). Operation from this point until return to the STATISTICS Subsystem Menu is that described on pp. 50 to 51.

Entering option 5, CREATE a set of "I" records identical to a set of "O" records, will result in the following display:

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Pipeline Analysis Model

STATISTICS Subsystem

This option creates a set of STATISTICS of type "I" identical to the set of STATISTICS of type "O" with Data Set # and Date specified below.

Please enter:

Data Set #:
End-of-week date: 11

Old set of STATISTICS records:

Courses: CDP # - Block #
Data Type: 0
Data Set #:
Date:

New set of STATISTICS records:

Courses: CDP # - Block #
Data Type: 0
Data Set #:
Date:

Press RETURN to continue, RECALL to return to Subsystem Menu.

When the user enters the Data Set number and Date of the "O" type files he wishes to use, the program will display the summary information shown on the display above; i.e., a description of the old "O" type group of records to be used as the information source and the new "I" type group of records to be created with that information. (The Data Set # to be used for the "I" records is the lowest unused number, determined automatically.) The new group of records will be created and the user will be transferred once again to the STATISTICS Subsystem Menu.

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OPTION 2, PRINT STATISTICS DATA. Selecting option 2 from the Statistics Subsystem Menu will result in the following display:

Print STATISTICS Data

This program will print or display the contents of the STATISTICS data file or the DEFAULT STATISTICS file.

If you wish to print the STATISTICS data file, press RETURN to continue.

If you wish to print the DEFAULT STATISTICS file, enter the word "DEFAULT" to continue.

#####

Pressing RETURN will activate the following:

PAM: PRINT STATISTICS FILE:

DESIRED OUTPUT DEVICE: _____

If, instead, "DEFAULT" was entered, then the following will appear:

PAM: PRINT DEFAULT STATISTICS FILE:

DESIRED OUTPUT DEVICE: _____

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The user should enter the 3-digit address of the desired printer. Pressing RETURN will default the address to the one showing on the screen (the address selected the last time the program was run).

If 005 is entered as the printer address, the contents of the STATISTICS File will be displayed on the CRT screen, three sets of STATISTICS at a time, as follows:

| | | |
|--|-----------------------------|---------|
| PAM: PRINT STATISTICS FILE | | Page: 1 |
| CDP - Block: _____ | End of week date: _____ | |
| | Data Type: _____ | |
| | Data Set: _____ | |
| Arrived: _____ | Enrolled: _____ | |
| Under Instruction: _____ | Awaiting Instruction: _____ | |
| Attrites: _____ | Graduates: _____ | |
| Setbacks: _____ | | |
| Press RETURN to continue, RECALL to STOP | | |

If the address of an appropriate printer is entered, the contents of the STATISTICS File will be output as hard copy, eight sets of STATISTICS to a page. (See appendix F for sample output.) While this is being printed, the screen will display the message: "Press ANY key to halt printing." If any key on the keyboard is hit, the printer will stop (after finishing the current STATISTICS record) and the following message will appear on the screen:

| |
|--|
| PAM: PRINT STATISTICS FILE |
| ***** INTERRUPT ***** |
| You have halted printing of the data. Do you wish to continue? (Y or N) |

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If the user enters Y (Yes) then the printer will resume printing (picking up where it left off) and the "Press any key to halt" message will reappear once more. If the user enters N (No) then the screen will display:

In response to your interrupt, we are returning to
the STATISTICS Subsystem Menu.

The next screen to appear will be the STATISTICS Subsystem Menu (see p. 43).

In the cases of both CRT display and printed hard-copy output when the last STATISTICS record has been output, hitting RETURN the next time will activate the following message.

END OF FILE Hit any key to return to STATISTICS Subsystem Menu

When any key on the keyboard has been pressed, the user will return once again to the STATISTICS Subsystem Menu.

OPTION 3, RESTORE DEFAULT STATISTICS DATA. Selecting option 3 from the Statistics Subsystem Menu will cause the following explanatory message to appear on the screen summarizing what will occur during the Restore Default Values operation:

Pipeline Analysis Model

STATISTICS Subsystem

**** Restore Default Values ****

Each record in the STATISTICS File will be set equal to the corresponding record in the DEFAULT STATISTICS File. If no corresponding record exists in the DEFAULT STATISTICS File you will have the option of creating one.

Do you wish to display or print the contents of the DEFAULT STATISTICS File before continuing (Y or N)

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Answering Y (Yes) will transfer the user immediately to the beginning of the PRINT STATISTICS Data operation (see STATISTICS Subsystem, option 2, p. 45). The user may then print or display the contents of the DEFAULT STATISTICS File and use the menu system to once more return to the Restore Default STATISTICS Values operation if desired.

Answering N (No) will cause the system to proceed with restoring the default values. As each record in the STATISTICS File is processed a message will appear on the screen:

Restoring ... STATISTICS record:

CDP-Block: _____ End of week data: _____

Data Type-Data Set: _____

This message will continue to appear, identifying each STATISTICS record until the entire file has been completed.

If any record is encountered without a corresponding DEFAULT File record, the following screen will appear:

Pipeline Analysis Model

STATISTICS Subsystem

Restore Default Values

No DEFAULT record exists for this STATISTICS record.

You may:

1. Leave the record for this STATISTICS record unchanged and leave the DEFAULT File with no record for this STATISTICS record.
2. Leave the record for this STATISTICS record unchanged and create a record in the DEFAULT File (from this STATISTICS record).
3. Delete this record from the STATISTICS File
4. Leave the record for this STATISTICS record unchanged and create a record in the DEFAULT File (using the STATISTICS Input/Edit Option).

Please enter # of option desired: _____

CDP-BLOCK:

DATA TYPE-DATA SET:

END OF WEEK DATE: __/__/__

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Selecting option 1, 2, or 3 will perform the designated operations and continue with the Restore Default procedure. Selection of option 4 will transfer the user to the STATISTICS Subsystem Menu, where the Input/Edit option can be used to create the STATISTICS DEFAULT record desired. The menu system may then be utilized to return once more to the Restore Default STATISTICS Values operation.

When all records in the STATISTICS FILE have been processed, the following message will appear:

..... DEFAULT RESTORATION IS NOW COMPLETE

Please hit RETURN to return to STATISTICS Subsystem Menu

Upon pressing RETURN, the user will return once again to the STATISTICS Subsystem Menu.

SIMULATION SUBSYSTEM (PAM MASTER MENU OPTION 4)

Figure 7 shows the various options available to the user of the PAM Simulation Subsystem.

Selecting option 4, Simulation Subsystem, from the PAM Master Menu will cause the system to display:

| PIPELINE ANALYSIS MODEL | SIMULATION SUBSYSTEM MENU | Release 1.0 |
|-----------------------------|---------------------------|-------------|
| Simulation Subsystem Menu | | |
| <u>Option</u> | <u>Subsystem</u> | |
| 1 | Determine INPUTS | |
| 2 | Run SIMULATION | |
| 3 | Generate OUTPUT report | |
| • | Return to Master Menu | |
| Enter Desired Option: _____ | | |

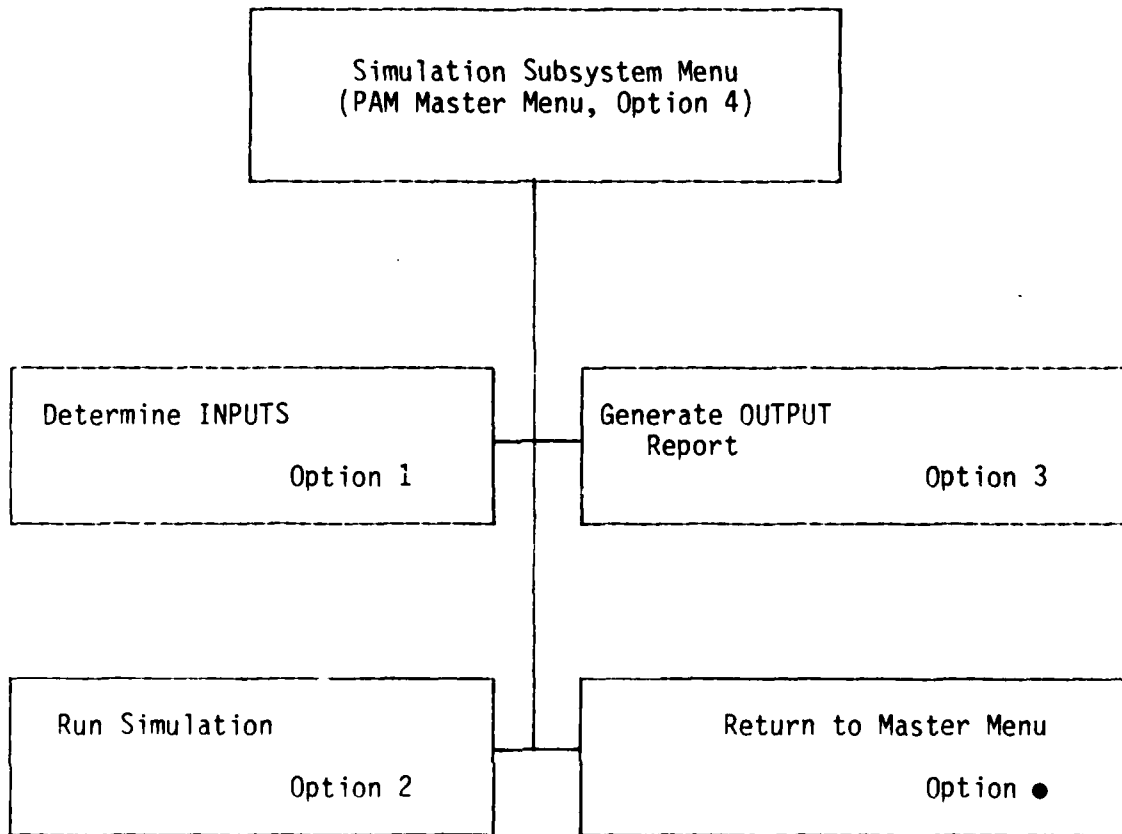


Figure 7. SIMULATION Subsystem Menu

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OPTION 1, GENERATE INPUTS. Selecting option 1 from the Simulation Subsystem Menu will result in the following:

| PIPELINE ANALYSIS MODEL | SIMULATION SUBSYSTEM |
|--|--|
| ----- | |
| INPUT SUBSYSTEM MENU | |
| <u>Option</u> | <u>INPUT Operations Menu</u> |
| 1 | Create/Edit INPUT File via tape |
| 2 | Create/Edit INPUT File via disk |
| 3 | Create/Edit INPUT File directly via keyboard |
| 4 | Delete INPUT File records |
| 5 | Print contents of INPUT File |
| • | Return to Simulation Subsystem Menu |
| Please enter desired option: # | |
| NOTE: Options 1 and 2 are not available at this time | |

Entering option 1, Create/Edit INPUT File via tape, will initiate only a message saying "options 1 and 2 are not available at the current time, please re-enter desired option." In the future, the option will allow translation and transferral of INPUT data directly from a magnetic tape into the INPUT File.

Entering option 2, Create/Edit INPUT File via disk, will initiate the same message as option 1. This option, in the future, will allow translation and transferral of INPUT data directly from other disk storage into the INPUT file.

Entering option 3, Create/Edit INPUT File directly via keyboard, will result in the following display:

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| PIPELINE ANALYSIS MODEL | SIMULATION SUBSYSTEM |
|---|----------------------|
| <p>Please enter the following specifications for the INPUT data records to be created:</p> <p>Course CDP# - Block #: _____</p> <p>*First End-of-Week Date: <u> </u> / <u> </u> / <u> </u></p> <p>Program will automatically determine the first Data Set # available and assign it to this set of data.</p> <p>*Program will automatically calculate the end-of-week dates which follow this initial date so corresponding ARRIVAL data can be entered for each.</p> | |

Upon entry of a (4-digit) CDP number, a (1-digit) block number, and a starting date, the following display will appear:

[illegible]

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The course CDP number and block number just entered will be displayed along with the Data Set number which will be assigned to this set of Inputs. (This is the first unused data set number for this course and will be automatically determined by the program.) The first end-of-week date, just entered, will be displayed and a prompt will appear for the corresponding ARRIVALS figure. When the user enters the desired number of ARRIVALS for that date, the following week's date will be displayed. When the desired weeks of data have been entered the user should type "END". This will transfer the user back to the INPUT Operations Menu.

Entering option 4, Delete INPUT File, will bring the following display:

| PIPELINE ANALYSIS MODEL | SIMULATION SUBSYSTEM |
|--|----------------------|
| INPUT FILE ----- DELETE MODE | |
| Please enter key of record to be Deleted: (Starting) | |
| CDP#: _____ | |
| Block #: _____ | |
| Data Set #: _____ | |
| Date: ____ / ____ / ____ | |

The specifying variables for the first INPUT record to be deleted should be entered here. This will cause the following screen to appear:

| PIPELINE ANALYSIS MODEL | SIMULATION SUBSYSTEM |
|--|----------------------|
| INPUT FILE ----- DELETE MODE | |
| Please enter key of record to be Deleted: (Ending) | |
| CDP#: _____ | |
| Block #: _____ | |
| Data Set #: _____ | |
| Date: ____ / ____ / ____ | |

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The key of the last INPUT record to be deleted should be entered here. After this is completed the following display will result:

| | |
|--|--------------|
| ***PAM INPUT File : <u>Delete Mode</u> | 04/04/82 S:1 |
| <div style="border: 1px solid black; padding: 10px; margin: 10px 0;">The keys below will be DELETED. Do you wish to continue? Y or N</div> | |

Listed will be the keys for the previously specified "starting" and "ending" INPUT records as well as for all records found in between these two. This entire set of records will be scheduled for deletion. Answering N (No) will abort the deletion process and return the user to the INPUT Operations Menu. Answering Y (Yes) will cause the deleted keys to disappear from the screen one at a time and the following message to appear:

Do you wish to continue in DELETE mode? (Y or N)

Answering Y (Yes) will cause the requests for "starting and ending keys to be DELETED" to reappear on the screen and additional sets of records may be deleted. Answering N (No) will once again return the user to the INPUT Operations Menu.

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Entering option 5, Print contents of INPUT File, will produce the following display:

PAM: PRINT INPUT FILE

Desired output device: _____

The user should enter the 3-digit address of the desired printer. RETURN will default the address to the one showing on the screen (the address selected the last time the program was run).

If 005 is entered as the printer address, the contents of the INPUT File will be displayed on the CRT screen, seven records at a time, as follows:

PAM: PRINT INPUT FILE

Page: 1

CDP - Block: _____

Data Set: _____

End of week date: _____

Arrived: _____

Press RETURN to continue, RECALL to stop

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If the address of an appropriate printer is entered, the contents of the INPUT File will be output as hardcopy, 12 INPUT records to a page. (See appendix G for sample output.) While this is being printed, the screen will display the message: "Press any key to halt printing." If any key on the keyboard is hit, the printer will stop (after finishing the current INPUT record) and the following message will appear on the screen:

PAM: PRINT INPUT FILE

**** INTERRUPT ****

You have halted printing of the data.
Do you wish to continue? (Y or N)

If the user enters Y (Yes) then the printer will resume printing (picking up where it left off) and the "Press any key to halt" message will reappear once more. If the user enters N (No) then the screen will display:

In response to your interrupt, we are returning to the
INPUT Subsystem Menu.

The next screen to appear will be the INPUT Operations Menu (see p. 59).

In the cases of both CRT display and printed hard-copy output when the last INPUT record has been output, hitting RETURN the next time will activate the following message:

END OF FILE. Hit any key to return to INPUT Subsystem Menu

When any key on the keyboard has been pressed, the user will return once again to the INPUT Operations Menu.

OPTION 2, RUN SIMULATION. Selecting option 2 from the Simulation Subsystem Menu will result in the following display:

| PIPELINE ANALYSIS MODEL | Simulation Subsystem |
|--|----------------------|
| <p>This portion of the program will simulate the flow of Naval students through their training pipeline. The simulation will handle one RATING at a time, analyzing the courses encountered in a particular training pipeline.</p> <p>Please enter:</p> <p>Rating to be simulated (RATING abbreviation): #####</p> <p>Date of beginning of simulation (last day of first week to be simulated, mm/dd/yy): ##/##/##</p> <p>Length of simulation (number of weeks): ##</p> <p>Data set # indicating which set of STATISTICS is to be used for simulation's Initial Conditions: ##</p> <p>Data set # indicating which set of INPUT data is to be used for simulation's weekly ARRIVALS: ##</p> <p>Enter FLEET returnee rate of reentry (1 to 100 percent): ###</p> <p>NOTE: Hit RECALL if you wish to return to the PAM Simulation Subsystem Menu</p> | |

When the user has entered the various specifications for the simulation run, the following will appear:

| PIPELINE ANALYSIS MODEL | Simulation Subsystem |
|---|----------------------|
| <div style="border: 1px solid black; display: inline-block; padding: 10px 40px; margin: 0 auto;">SIMULATION IN PROGRESS</div> <p>Data Set #X will be used for OUTPUT Statistics</p> <p>Currently updating week # _____.</p> <p>Press RETURN to halt.</p> <p>NOTE: Actual halt will occur at end of weekly update.</p> | |

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The number of the data set where the output statistics for this simulation run will be stored will be displayed. (This will be the first unused output data set found.) The number of the simulation week being processed will also be displayed. If the user presses RETURN at any time, the simulation will halt when it has completed updating all the courses in the pipeline for the current week. The following will then appear:

| PIPELINE ANALYSIS MODEL | SIMULATION SUBSYSTEM |
|--|----------------------|
| **** INTERRUPT **** | |
| You have halted simulation at week XX. | |
| Do you wish to continue? (Y or N) | |

Entering Y (Yes) will cause the simulation to continue from the following week to the originally specified end. Entering N (No) will cause the simulation run to abort at that point. In both cases, the end of the simulation run will cause the following display to appear:

| PIPELINE ANALYSIS MODEL | SIMULATION SUBSYSTEM |
|---|----------------------|
| THIS SIMULATION RUN IS NOW COMPLETE | |
| This run had the following specifications: | |
| Rating simulated was XXXXX. | |
| First week of simulation was mm/dd/yy. | |
| Last week of simulation was mm/dd/yy. | |
| Total length of simulated time was XX weeks. | |
| Data Set # used for Initial Conditions STATISTICS was XX. | |
| Data Set # used for INPUT weekly ARRIVALS was XX. | |
| Data Set # used for output STATISTICS was XX. | |
| The Pipeline of courses simulated was the following: | |
| Would you like a hard copy of this summary? (Y or N) | |

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Displayed will be the various specifications which describe the simulation run just completed. Answering N (No) will bring the following message:

Please press RETURN to transfer to Subsystem Menu

Following this, the user will be transferred once again to the Simulation Subsystem Menu.

Answering Y (Yes) will bring a request to:

Please enter address of desired printer: ____

Upon entry of the address of an appropriate printer, the same summary is output as hard copy in a similar format. When this has been completed, the user is once again transferred to the Simulation Subsystem Menu.

OPTION 3, GENERATE OUTPUT REPORT. Selecting option 3 from the Simulation Subsystem Menu will result in the following display:

| PIPELINE ANALYSIS MODEL | SIMULATION SUBSYSTEM |
|--|----------------------|
| **** PRINT SIMULATION OUTPUT **** | |
| Enter the Rating to Output - _____ | |
| Enter the Starting Week to Output - ____ / ____ / ____ | |
| Enter the Output Data Set # - _____ | |
| Please enter address of desired printer: _____ | |
| Hit RECALL to return to Simulation Subsystem. | |

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Entering the abbreviation of the rating that was simulated, the date of the first week of the simulation and the data set # under which the output statistics were stored will fully specify the simulation run to be reported. The user should also enter the 3-digit address of the desired printer. RETURN will default the address to the one showing on the screen (the last address selected).

If 005 is entered as the printer address, the output statistics for the specified simulation run will be displayed on the CRT screen one course at a time as shown:

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PAM: PRINT SIMULATION OUTPUT REPORT
RATING ABBREVIATION = XXXXX

OUTPUT DATA SET: XX

Page: 1

| Weeks | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-------|---|---|---|---|---|---|---|---|---|----|
|-------|---|---|---|---|---|---|---|---|---|----|

Course
Type

(CDP#-B#)

ARR

ENR

UI

AI

Attrites

Grads

| Weeks | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|-------|----|----|----|----|----|----|----|----|----|----|
|-------|----|----|----|----|----|----|----|----|----|----|

ARR

ENR

UI

AI

Attrites

Grads

Press RETURN to continue, RECALL to stop.

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Each of the matrix entries will represent the number of students in a particular category at a particular simulation week. Pressing RETURN will display the statistics for the next course simulated, until they have all been displayed.

If the address of an appropriate printer is entered, the output statistics for each course simulated will be output as hard copy in a similar format. (See appendix H for sample output.) While this is being printed, the screen will display the message: "Press any key to halt printing." If any key on the keyboard is hit, the printer will stop (after finishing the current course's statistics) and the following message will appear on the screen:

**** INTERRUPT ****

You have halted printing of the data.
Do you wish to continue? (Y or N)

If the user enters Y (Yes) then the printer will resume printing (picking up where it left off) and the "Press any key to halt" message will reappear once more. If the user enters N (No) then the screen will display:

In response to your interrupt, we are returning
to the INPUT Subsystem Menu.

The next screen to appear will be the Simulation Subsystem Menu (see p. 58).

In the cases of both CRT display and hard-copy output, when the last course's output statistics have been output, hitting RETURN the next time will also activate the "return to Simulation Subsystem Menu" message and transfer to the PAM Simulation Subsystem Menu. (See appendix H for an example of the output.)

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APPENDIX A
EXAMPLE OF A RATINGS RECORD

PIPELINE ANALYSIS MODEL RATINGS EDIT SCREEN Release 1.0

(1) Abbreviation:XX

(2) Full Name:TEST RATING

| | | | | |
|---------------------|--------|--------|--------|--------|
| (3) Pipeline:1111-1 | 2222-1 | 3333-1 | 1110-1 | 111G-1 |
| (4) 111S-1 | 1110-2 | 111G-2 | 111S-2 | 999A-1 |
| (5) ###-# | ###-# | ###-# | ###-# | ###-# |
| (6) ###-# | ###-# | ###-# | ###-# | ###-# |

(7) Comment:FICTITIOUS COURSE NAMES AND CDP'S
(8) 6 BLANK CHAR'S = NO PARALLEL A'S

RETURN-edit next line A-abort,return to I/E MENU S-save,return to I/E MENU #
Please enter # of line to be edited or above option:

APPENDIX B
EXAMPLE OF A PRINT RATINGS FILE

07/14/82 PIPELINE ANALYSIS MODEL RATINGS

Abbreviation: XX Rating Name: TEST RATING
 Comments: FICTITIOUS COURSE NAMES AND CDP'S
 Comments: 6 BLANK CHAR'S = NO PARALLEL A'S
 Instruction Pipeline:
 1111-1
 2222-1
 3333-1
 1110-1
 1116-1
 1115-1
 1110-2
 1116-2
 1115-2
 999A-1

Abbreviation: XY Rating Name: SECOND TEST RATING
 Comments: FICTITIOUS COURSES
 Comments:
 Instruction Pipeline:

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APPENDIX C
EXAMPLE OF A COURSE RECORD

PIPELINE ANALYSIS MODEL COURSE EDIT SCREEN Release 1.0

[1] CDP #:111G Block #:1 CIN #:B-100-1000
 [2] Course Title:BE/E SCHOOL - BLOCK 1 Type:B
 [3] Location:GREAT LAKES Length: 20
 [4] Maximum no. students: 46 Attrition rate: 8% Setback rate: 8%

Convening Schedule (mm/dd/yy):

| | | | |
|--------------|---------|-------|-------|
| [5] 1/ 1/82 | 3/19/82 | ##### | ##### |
| [6] 1/ 8/82 | 3/26/82 | ##### | ##### |
| [7] 1/15/82 | 4/ 2/82 | ##### | ##### |
| [8] 1/22/82 | 4/ 9/82 | ##### | ##### |
| [9] 1/29/82 | 4/16/82 | ##### | ##### |
| [10] 2/ 5/82 | 4/23/82 | ##### | ##### |
| [11] 2/12/82 | 4/30/82 | ##### | ##### |
| [12] 2/19/82 | 5/ 7/82 | ##### | ##### |
| [13] 2/26/82 | 5/14/82 | ##### | ##### |
| [14] 3/ 5/82 | ##### | ##### | ##### |
| [15] 3/12/82 | ##### | ##### | ##### |

RETURN-edit next line A-abort, return to I/E MENU S-save, return to I/E MENU
 Please enter # of line to be edited or above option: ##

APPENDIX D

EXAMPLE OF PRINT COURSE FILE

| PIPTLINE ANALYSIS MODEL: COURSE 1 | | | | | | | | | |
|-----------------------------------|--|-------------------------------------|------------------------------|--|--|--|--|--|--|
| Page: 1 | | | | | | | | | |
| CDP-Block: 1111-1 | CINB-100-1000 | Course Title: CRUIT TRAINING - CRU | Location: GREAT LAKES | | | | | | |
| Type: B | Attrition Rate: 10% | Setback Rate: 10% | | | | | | | |
| Convening | Schedule Date: last day of week in which class opens | Avg. Length of Instruction: 40 | Mat. Number of Students: 100 | | | | | | |
| 01/01/82 | 03/13/82 | | | | | | | | |
| 01/08/82 | 03/26/82 | | | | | | | | |
| 01/15/82 | 04/02/82 | | | | | | | | |
| 01/22/82 | 04/09/82 | | | | | | | | |
| 01/29/82 | 04/16/82 | | | | | | | | |
| 02/05/82 | 04/23/82 | | | | | | | | |
| 02/12/82 | 04/30/82 | | | | | | | | |
| 02/19/82 | 05/07/82 | | | | | | | | |
| 02/26/82 | 05/14/82 | | | | | | | | |
| 03/05/82 | | | | | | | | | |
| 03/12/82 | | | | | | | | | |
| CDP-Block: 1111-2 | CINB-100-1000 | Course Title: E/E SCHOOL - BLOCK 1 | Location: GREAT LAKES | | | | | | |
| Type: B | Attrition Rate: 8% | Setback Rate: 8% | | | | | | | |
| Convening | Schedule Date: last day of week in which class opens | Avg. Length of Instruction: 20 | Mat. Number of Students: 46 | | | | | | |
| 01/01/82 | 03/13/82 | | | | | | | | |
| 01/08/82 | 03/26/82 | | | | | | | | |
| 01/15/82 | 04/02/82 | | | | | | | | |
| 01/22/82 | 04/09/82 | | | | | | | | |
| 01/29/82 | 04/16/82 | | | | | | | | |
| 02/05/82 | 04/23/82 | | | | | | | | |
| 02/12/82 | 04/30/82 | | | | | | | | |
| 02/19/82 | 05/07/82 | | | | | | | | |
| 02/26/82 | 05/14/82 | | | | | | | | |
| 03/05/82 | | | | | | | | | |
| 03/12/82 | | | | | | | | | |
| CDP-Block: 1111-3 | CINB-100-2000 | Course Title: BE/E SCHOOL - BLOCK 2 | Location: GREAT LAKES | | | | | | |
| Type: B | Attrition Rate: 9% | Setback Rate: 9% | | | | | | | |
| Convening | Schedule Date: last day of week in which class opens | Avg. Length of Instruction: 20 | Mat. Number of Students: 52 | | | | | | |
| 01/01/82 | 03/13/82 | | | | | | | | |
| 01/08/82 | 03/26/82 | | | | | | | | |
| 01/15/82 | 04/02/82 | | | | | | | | |
| 01/22/82 | 04/09/82 | | | | | | | | |
| 01/29/82 | 04/16/82 | | | | | | | | |
| 02/05/82 | 04/23/82 | | | | | | | | |
| 02/12/82 | 04/30/82 | | | | | | | | |
| 02/19/82 | 05/07/82 | | | | | | | | |
| 02/26/82 | 05/14/82 | | | | | | | | |
| 03/05/82 | | | | | | | | | |
| 03/12/82 | | | | | | | | | |

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APPENDIX E
EXAMPLE OF A STATISTICS RECORD

```

PIPELINE ANALYSIS MODEL
=====
(1) CDP #:2222      Block #:1
(2) End of week date: 1/ 8/82      Data Type:0      Data Set #: 3

(3) ARRIVED: 10      ENROLLED: 10
(4) UNDER INSTRUCTION: 66      AWAITING INSTRUCTION: 0
(5) ATRITES: 1      GRADUATES: 11      SETBACKS: 1

```

Release 1.0

RETURN-edit next line A-abort, return to I/E MENU S-save, return to I/E MENU #
Please enter # of line to be edited or above option:

APPENDIX F
EXAMPLE OF PRINT STATISTICS FILE

07/14/82 PIPELINE ANALYSIS MODEL : STATISTICS Page 1

COP-Block: 1111-1 Data Type-Data Set: 1-01 End of week date: 01/01/82
 ARRIVED: 10 ENROLLED: 10
 USER INSTRUCTION: 66 AWAITING INSTRUCTION: 0
 ATTRITES: 1 GRADUATES: 9
 SETBACKS: 1

COP-Block: 1111-1 Data Type-Data Set: 1-02 End of week date: 01/24/82
 ARRIVED: 10 ENROLLED: 10
 USER INSTRUCTION: 66 AWAITING INSTRUCTION: 0
 ATTRITES: 1 GRADUATES: 11
 SETBACKS: 1

COP-Block: 1111-1 Data Type-Data Set: 0-02 End of week date: 01/01/82
 ARRIVED: 10 ENROLLED: 10
 USER INSTRUCTION: 66 AWAITING INSTRUCTION: 0
 ATTRITES: 1 GRADUATES: 11
 SETBACKS: 1

COP-Block: 1111-1 Data Type-Data Set: 0-03 End of week date: 01/01/82
 ARRIVED: 10 ENROLLED: 10
 USER INSTRUCTION: 66 AWAITING INSTRUCTION: 0
 ATTRITES: 1 GRADUATES: 11
 SETBACKS: 1

COP-Block: 1111-1 Data Type-Data Set: 0-03 End of week date: 01/08/82
 ARRIVED: 10 ENROLLED: 10
 USER INSTRUCTION: 66 AWAITING INSTRUCTION: 0
 ATTRITES: 1 GRADUATES: 11
 SETBACKS: 1

COP-Block: 1111-1 Data Type-Data Set: 0-03 End of week date: 01/15/82
 ARRIVED: 10 ENROLLED: 10
 USER INSTRUCTION: 66 AWAITING INSTRUCTION: 0
 ATTRITES: 1 GRADUATES: 11
 SETBACKS: 1

COP-Block: 1111-1 Data Type-Data Set: 0-03 End of week date: 01/22/82
 ARRIVED: 10 ENROLLED: 10
 USER INSTRUCTION: 66 AWAITING INSTRUCTION: 0
 ATTRITES: 1 GRADUATES: 11
 SETBACKS: 1

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APPENDIX G
EXAMPLE OF PRINT INPUT FILE

01/14/82 PIPELINE ANALYSIS MODEL: INPUT FILE Page 1

CDP-Block: 1111-1 Data Set: 1
End of week date: 01/01/82 ARRIVED: 15

CDP-Block: 1111-1 Data Set: 1
End of week date: 01/08/82 ARRIVED: 5

CDP-Block: 1111-1 Data Set: 1
End of week date: 01/15/82 ARRIVED: 10

CDP-Block: 1111-1 Data Set: 1
End of week date: 01/22/82 ARRIVED: 0

CDP-Block: 1111-1 Data Set: 1
End of week date: 01/29/82 ARRIVED: 13

CDP-Block: 1111-1 Data Set: 1
End of week date: 02/05/82 ARRIVED: 14

CDP-Block: 1111-1 Data Set: 1
End of week date: 02/12/82 ARRIVED: 15

CDP-Block: 1111-1 Data Set: 1
End of week date: 02/19/82 ARRIVED: 15

CDP-Block: 1111-1 Data Set: 1
End of week date: 02/26/82 ARRIVED: 7

CDP-Block: 1111-1 Data Set: 1
End of week date: 03/05/82 ARRIVED: 2

CDP-Block: 1111-1 Data Set: 1
End of week date: 03/12/82 ARRIVED: 11

CDP-Block: 1111-1 Data Set: 1
End of week date: 03/19/82 ARRIVED: 15

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APPENDIX H

EXAMPLE OF PRINT OUTPUT REPORT

PIPELINE ANALYSIS MODEL

PAGE 1

—A—

—B—

—C—

—D—

—E—

—F—

—G—

—H—

—I—

—J—

—K—

—L—

—M—

—N—

—O—

—P—

—Q—

—R—

—S—

—T—

—U—

—V—

—W—

—X—

OUTPUT STATISTICS DATA SET: OS

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|----------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| RTC (11111) | | | | | | | | | | | | | | | | | | | | |
| APR | 10 | 5 | 10 | 0 | 13 | 14 | 15 | 15 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENR | 10 | 5 | 10 | 0 | 13 | 14 | 15 | 15 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| UI | €6 | +1 | €1 | 51 | 54 | 58 | €3 | €9 | €6 | €2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AI | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ATTRIBUTES | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| GRADS | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RTC (12221) | | | | | | | | | | | | | | | | | | | | |
| APR | 10 | 5 | 0 | 10 | 13 | 14 | 15 | 15 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENR | 10 | 5 | 0 | 10 | 13 | 14 | 15 | 15 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| UI | €6 | +1 | 51 | 51 | 54 | 58 | €4 | €9 | €6 | €2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AI | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ATTRIBUTES | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| GRADS | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RTC (13331) | | | | | | | | | | | | | | | | | | | | |
| APR | 10 | 5 | 10 | 13 | 14 | 15 | 15 | 15 | 7 | 2 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENR | 10 | 5 | 10 | 13 | 14 | 15 | 15 | 15 | 7 | 2 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| UI | €6 | €1 | €1 | €4 | €8 | 73 | 78 | 75 | €7 | €7 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AI | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ATTRIBUTES | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| GRADS | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BE/E-SCH. (11101) | | | | | | | | | | | | | | | | | | | | |
| APR | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENR | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| UI | 4€ | 4€ | 4€ | 4€ | 4€ | 4€ | 4€ | 4€ | 4€ | 4€ | 4€ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AI | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ATTRIBUTES | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| GRADS | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| BE/E-SCH. (11101) | | | | | | | | | | | | | | | | | | | | |
| APR | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENR | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| UI | 4€ | 4€ | 4€ | 4€ | 4€ | 4€ | 4€ | 4€ | 4€ | 4€ | 4€ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AI | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ATTRIBUTES | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| GRADS | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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